DOCUMENT RESUME

ED 477 395 EC 309 612

AUTHOR	Connor, Karen; Dettmer, Judy; Dise-lewis, Jeanne E.; Murphy, Mary; Santistevan, Barbette; Seckinger, Barbara
TITLE	Brain Injury: A Manual For Educators.
INSTITUTION	Colorado State Dept. of Education, Denver.
PUB DATE	2001-00-00
NOTE	77p.; A joint effort of the Colorado Department of Education, The Brain Start Project and the Center For Community Participation at Colorado State University in Fort Collins, Colorado.
AVAILABLE FROM	Colorado Department of Education State Library and Adult Education Office, 201 E. Colfax, Denver, CO 80203. Tel: 303-866-6600; Fax: 303-830-0793; Web site: http://www.cde.state.co.us.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	EDRS Price MF01/PC04 Plus Postage.
DESCRIPTORS	Classroom Observation Techniques; *Cognitive Processes; *Compensatory Education; *Developmental Stages; Developmental Tasks; Developmentally Appropriate Practices; Elementary Secondary Education; *Head Injuries; Learning Problems; *Neurological Impairments; *Special Education; Team Teaching; Transitional Programs
IDENTIFIERS	Colorado

ABSTRACT

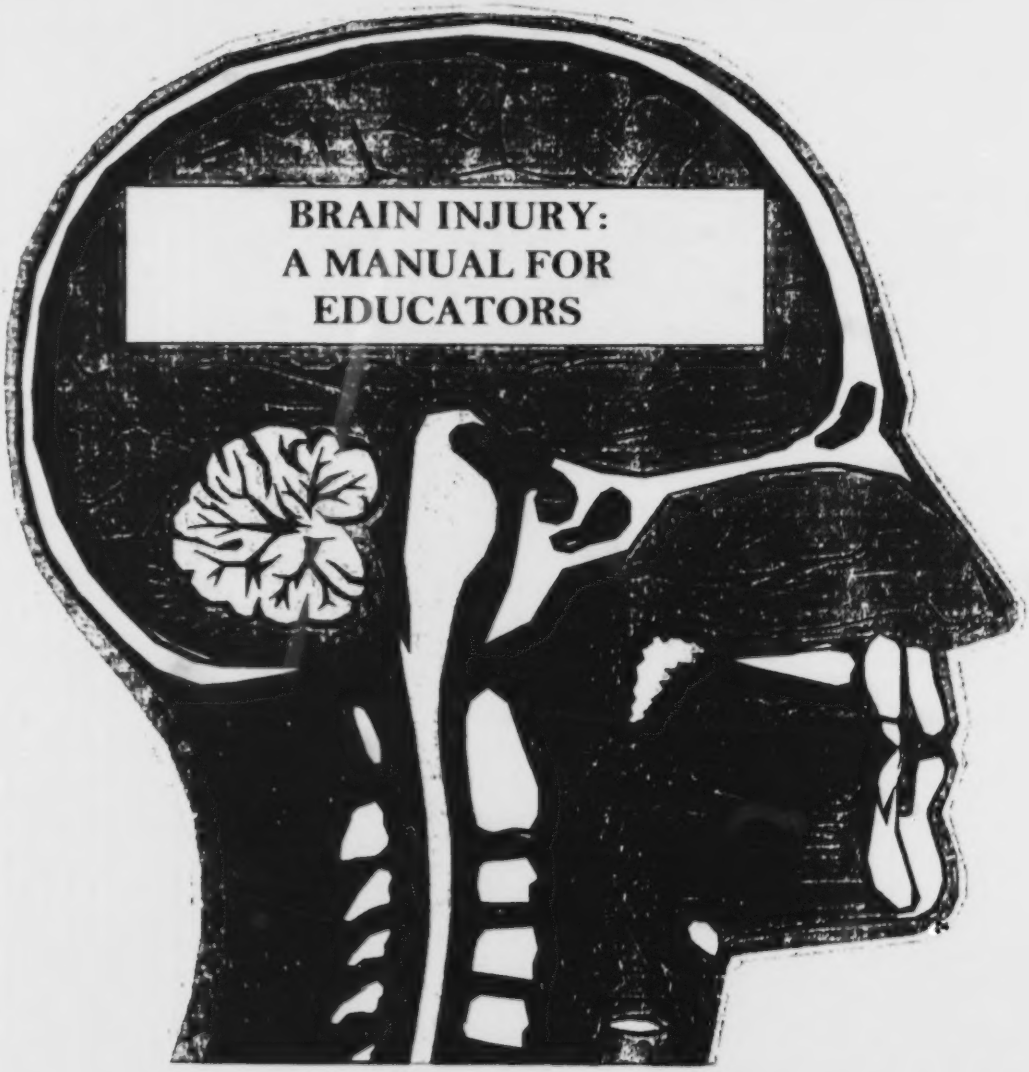
This manual provides Colorado educators with guidelines for serving students with brain injuries. Following an introductory chapter, chapter 2 provides basic information on the brain including definitions of brain injury and its severity, incidence of brain injury, and characteristics of students with brain injury. Chapter 3 considers relationships among brain injury, learning, and development. It outlines the major stages of brain development and describes effects on behavior and learning of a brain injury acquired at each developmental stage. Chapter 4 introduces the concept of transition, identifies transition issues, and provides strategies to address these issues. Chapter 5 is on changes in learning and compensatory strategies. It offers strategies for changes in sensory and motor systems; speed of mental processing; cognitive abilities; new learning; memory; attention and concentration; reasoning, problem solving, and judgment; organizational skills, emotions, social skills and behavior; and energy level. Task analysis is the focus of the sixth chapter. Chapter 7 is on brain injury resources for teachers and offers a framework for establishing a team within individual school districts or schools. Chapter 8 identifies components of an effective special education program for this population. A classroom observation guide is appended. (Contains 26 references.) (DB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

EC
ECTR 0059

ED 477 395

BRAIN INJURY: A MANUAL FOR EDUCATORS



BEST COPY AVAILABLE

COLORADO DEPARTMENT OF EDUCATION

EC 309612

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
N. Bolt
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
1

Colorado State Board of Education
2001

Randy DeHoff, Chairman
6th Congressional District
Littleton

John Burnett, Vice Chairman
5th Congressional District
Colorado Springs

Evie Hudak
2nd Congressional District
Arvada

Claire Orr
4th Congressional District
Kersey

Jared Polis
Member-At Large
Boulder

Gully Stanford
1st Congressional District
Denver

Pam Suckla
3rd Congressional District

ACKNOWLEDGEMENTS

This manual has been a joint effort of the Colorado Department of Education, The Brain Start Project and the Center For Community Participation at Colorado State University in Fort Collins, Colorado. The following individuals were involved in the writing of this manual:

Karen Connor, R.N., M.P.H.
Judy Dettmer, B.S.W.
Jeanne E. Dise-Lewis, Ph.D.
Mary Murphy, O.T.R.
Barbette Santistevan, B.S.
Barbara Seckinger, M.A.

In addition the following individuals assisted with critiquing and editing this document:

Carla Adams, Colorado Department of Public Health and Environment
Lois Adams, Colorado Department of Education, Special Education Services
Judith Harrigan, R.N., Colorado State School Nurse Consultant
Ann Pearce, Colorado Department of Education, Special Education Services
The Colorado Brain Injury Association

Thank you to each of them for their time and effort and invaluable contributions that have made this manual possible.

TABLE OF CONTENTS

CHAPTER I– Overview of Manual.....1

CHAPTER II–The Brain.....4

CHAPTER III– The Relationships between Brain Injury, Learning, and Development.9
- Infancy: Birth –3 years.....11
- Preschool: 3-6 Years.....12
- Elementary: 6-12 Years.....14
- Early Adolescence: 12-16 Years.....15
- Late Adolescence: 16-19 Years.....17

CHAPTER IV-Transitions.....20
- Issue and Barriers.....20
- Strategies.....21

CHAPTER V-Changes In Learning and Compensatory Strategies.....28
- Sensory & Motor.....29
- Mental Processing.....30
- Cognitive Abilities.....32
- New Learning.....34
- Memory.....35
- Attention & Concentration.....37
- Reasoning, Problem Solving, and Judgment.....38
- Organizational Skills.....39
- Emotions, Social Skills, & Behavior.....44
- Fatigue/Endurance.....46

CHAPTER VI-Task Analysis.....48

CHAPTER VII-Brain Injury Teams.....51

CHAPTER VIII-Special Education and 504 Processes.....54

APPENDIX
- Statewide Resources.....a
- Suggested Readings.....b
- References.....b
- Classroom Observation Guide.....c-l

CHAPTER I
What this Manual is all About

You may be wondering why you as a teacher should be interested in brain injury. If you are like most people, school personnel included, you probably think it is a pretty low frequency problem in children. However, this is far from true. In fact, brain injury is the leading cause of both death and disability in children.

The most recent Department of Education task force found that about 6,000 school age children acquire a brain injury each year in the state of Colorado. Where are all of these children? Chances are that they are in your classroom, maybe receiving special education interventions, but misidentified as having a Learning Disability, Attention Deficit Disorder, or Significant Emotional-Behavioral Disturbance.

The most recent Department of Education task force found that about 6,000 school age children acquire a brain injury each year in the state of Colorado. Brain injury is the leading cause of both death and disability

There are many reasons why school personnel may not know that the student with learning problems in their class has a brain injury.

- If the injury occurred in infancy or before school was started, the parents may not realize that there could be a connection with learning problems. Parents are often told by their child's physician that there will not be any long-term effects of the injury. Therefore, they do not report the history when the child starts school.
- The information about the injury may not follow the child through his educational career. This happens particularly when the child moves from school to school, such as from elementary to middle school.
- Both parents and school personnel may miss the potential consequences of mild brain injury on school performance and learning ability.
- A parent may not want to tell the school about injuries that have occurred during domestic violence, or injuries that reflect poorly on parental supervision and care.
- Parents may not know of their child's participation in "problem" activities, such as "huffing" or playing asphyxiation games, which cause brain injury.

Teachers have to consider the possibility that a child's learning problems could stem from a brain injury. The student with a brain injury may have problems in school that look the same as children with other disabilities.

Therefore, teachers have to consider the

BEST COPY AVAILABLE

possibility that a child's learning problems could stem from a brain injury. The student with a brain injury may have problems in school that look the same as children with other disabilities, for example, Attention Deficit Disorder, Oppositional Defiant Disorder, or Emotional/Behavioral Disturbance. The student may be identified as having one of these handicapping conditions and may even have an Individualized Education Plan (IEP) related to one of these problems.

You may also wonder, then, if the child is identified and receiving special services, why it is important that he be identified TBI. It is important because this student's learning and behavior problems come from a very different root source, and interventions which work for these other disorders are often ineffective with the child who has a brain injury. Therefore, you will be much more effective as a teacher if you understand the true cause of his trouble.

When discussing brain injury, it is important to know that there several categories for classification of the injury. Acquired Brain Injury refers to all types of brain injuries, whether from an outside trauma (like a blow to the head) or an internal trauma (like a stroke). Traumatic Brain Injury refers only to those brain injuries caused by an external force.

It is the responsibility of the adults in the child's world to identify what the barriers are to the child's learning and to identify and build on the child's strengths.

In **Chapter 2** there is an explanation of brain injury, about the brain and how it works, and about what happens to the brain when it is injured. Because a child's brain is developing and changing actively, from birth through late adolescence, it is important to know when the child had his brain injury. In general, the earlier the injury, the more serious is the impact on behavior, regulation of emotion, and thinking.

In **Chapter 3**, issues pertaining to development will be discussed. All individuals with brain injury find that they do much better when they can predict what they will be doing, rehearse or prepare for it, and when they are operating in familiar settings with familiar materials. For this reason, transitions are often very difficult.

Chapter 4 deals with transitions, large and small, and how the difficulties inherent in transitions for children and adolescents with a brain injury can be minimized.

The student with a brain injury usually has a few clear, specific difficulties, and a whole range of "higher order" cognitive problems. The most obvious, specific changes usually are the physical ones (muscle weakness, lack of balance, or paralysis, for example) that are addressed by therapists (occupational, physical, and speech) in and out of the school setting with support from teachers and family members.

The recovery or rehabilitation of cognitive and learning problems is usually left up to school personnel. The more clearly the needs are identified and the sooner a plan is developed the better the outcome.

In **Chapter 5**, the major learning difficulties associated with a brain injury, and strategies for intervention are discussed. Often, it will be clear to the teacher that the student has learning problems but the underlying processes are less clear. For example, the student may get only 20% of the math problems correct on paper after paper. Does the student have a math disability, attention problems, memory problems, or organizational deficits? Teachers, of course, figure this out by doing task analyses: breaking down the worksheet or lesson into smaller steps and finding out precisely where the problem occurs.

In **Chapter 6** some strategies about task analysis will be discussed and applied to the problems of the student with a brain injury

Finally, remember that students with brain injuries are often very challenging and difficult to understand. They often have uneven skills. In some areas a student may perform with the skills of an 8th grader and in other areas, perform more like an infant. The student may be able to demonstrate a particular skill one-day and not the next.

The very best situation is when teachers, parents, and the rehabilitation team join together to try to understand the student and figure out what works most of the time. In this venture, you are not alone! There are resources in the state to provide consultation, in-services, training, and support as you try to help the student with a brain injury to reach his or her maximum potential.

Chapter 7 includes some of these resources. It is the responsibility of the adults in the child's world - parents, teachers, school support staff and rehabilitation team - to identify what the barriers are to the child's learning and to identify and build on the child's strengths.

We know a great deal about brain injury and about how children learn. The student with a brain injury challenges us to merge these two areas of knowledge and become the best teachers we can be. We hope you will find that you are already doing many of the things we discuss in this guide, and that the interventions and ideas are helpful for all of your students. As many teachers have said to us, "this is just good teaching!"

Chapter 8 discusses the process and strategies that school districts can use to address the learning needs of students who have had a brain injury. These processes may include qualifying for special education or 504 services.

8

CHAPTER ll

The Brain and How it Works

This Chapter includes:

- **The definitions of brain injury**
- **Descriptions of brain injury severity**
- **The incidence of brain injury**
- **How the brain works**
- **Common characteristics of students with brain injury**

In order to fully understand a student with an acquired brain injury, it is important to have a basic understanding of how the brain functions and what happens to the brain following an injury.

INCIDENCE OF BRAIN INJURY

Statistics can be misleading when looking at the incidence of brain injury because the numbers only reflect traumatic brain injuries rather than the much higher numbers of acquired brain injuries. Furthermore, many individuals with brain injuries often go undiagnosed or are misdiagnosed. As a result, the incidence of brain injury is likely to be higher than the recorded statistics. The Brain Injury Association of Colorado cites the following statistics in their brochure:

- Every 15 seconds in America a person sustains a traumatic brain injury; every five minutes, one of these people will die and another will become permanently disabled.
- A conservative estimate puts the total number of TBIs in the United States at over 2 million per year, with 500,000 of these injuries severe enough to require hospitalization.
- Motor vehicle crashes account for 50% of all TBIs, Falls -21%, Violence - 12%, and Sports/Recreation - 10%.
- Child abuse accounts for 64% of all infant brain injuries.
- The estimated lifetime cost for each survivor of a severe brain injury exceeds $4 million.
- The cumulative annual cost of brain injury approaches $25 billion.
- Research into the control and treatment of traumatic brain injury receives less than one penny of every Federal dollar spent on medical research today.

BRAIN INJURY

Traumatic Brain Injury is identified in the Individuals With Disabilities Act (IDEA) as a category under physical disabilities and the impact of this injury on learning may qualify a student for special education services. If a child has sustained a non-traumatic head injury, the impact of this type of injury on learning, may also make a student eligible for special education services in the "other" category under physical disabilities. This will be discussed at greater length in the Special Education Section of Chapter 8. The characteristics and effects of a head injury are similar no matter what the cause.

Definition: Savage and Wolcott, (1994) p.3 define Acquired Brain Injury as an injury to the brain that has occurred after birth. A brain injury can be caused by either an external physical force or by a non-traumatic occurrence. The term acquired brain injury refers to all brain injuries except those that are congenital or brain injuries induced by birth trauma." Examples of traumatic and non-traumatic brain injuries are:

Traumatic Brain Injuries:

- Open head injuries caused by accidents, falls, abuse, assaults, and surgical procedures that result in a penetrating wound to the brain.
- Closed head injuries caused by accidents, falls, abuse, and assaults in which the skull and protective tissue surrounding the brain remain intact but damage to the brain comes from internal compression, stretching, or shearing actions

Non-traumatic Brain Injuries:

- Anoxic injuries caused by a reduction in oxygen to the brain from anesthetic accidents, hanging, choking, near-drowning, severe blood loss
- Infections of the brain such as meningitis and encephalitis
- Strokes and other vascular accident
- Tumors of the brain
- Metabolic disorders that affect the brain such as insulin shock, liver and kidney diseases
- Toxic products taken into the body, including lead, mercury, crack cocaine, and other chemical agents, either ingested or inhaled Savage, R, Wolcott, G., pp. 3-4 (1994).

SEVERITY OF BRAIN INJURY

Often a student's medical records will indicate a mild, moderate, or severe brain injury. The following information relates to the medical divisions among these three categories. Sohlberg et al, (1999) p.11

Mild:

- Brief or no loss of consciousness
- Often referred to as "post-concussion syndrome"
- Injury may not be visible with medical imaging
- Individual appears to be "fine"
- Individual is unable to remember events that happened before or after the accident.
- 10% of individuals experience long term consequences

Moderate:

- Up to 24 hours loss of consciousness or coma
- Individual may sustain fractures, bruises, or bleeding of the brain (subdural hematoma)
- Injury is visible with medical imaging
- 1/3 to 1/2 of individuals will have lifetime difficulties with learning and daily activities

Severe:

- Coma longer than 24 hours
- 80% of individuals will have lifetime disabilities
- Long term support will be required at home, in school, and in the community, and to sustain employment and Independent living

It is important to take seriously parents' reports of subtle changes in mood, personality and behavior following a brain injury.

All students who have had a brain injury do not necessarily have problems afterward, but the possibility should be considered.

In particular, very little is known about children and adolescents with mild acquired brain injuries.

It is important to note that the severity of the injury does not equate to the functioning level of the student. For instance, a student may be diagnosed with a "mild" brain injury, but may experience significant difficulty related to learning common and daily functions.

These deficits are thought to result from subtle disruptions in the frontal lobes of the brain at sensitive periods of growth. Depending on the age of the student at the time of the injury, the effects of mild brain damage may not be apparent until several years after the student's injury.

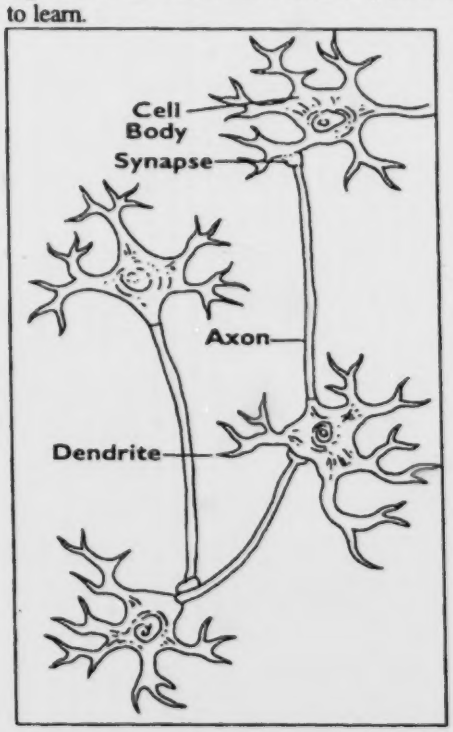
It is important to take seriously parents' reports of subtle changes in mood, personality and behavior at any time following a brain injury. Teachers see students in a very different environment, and the sharing of perspectives

between parents and teachers is a productive start to identifying the salient learning problems.

How The Brain Works and What Happens During an Injury

A brain that has been preserved in formaldehyde for study or dissection is solid and spongy, not unlike a cooked head of cauliflower. If you cut into it, it is possible to break a part off or separate a section. However, a living brain does not have a solid consistency; rather, it is gelatinous.

At the microscopic level, the brain is made up of cells called neurons that have long branches called axons. As an individual develops, these axons grow, connect with other axons, and form pathways connecting one part of the brain with another. The more developed these pathways are, the smoother and more integrated is the individual's behavior; he is able to learn.

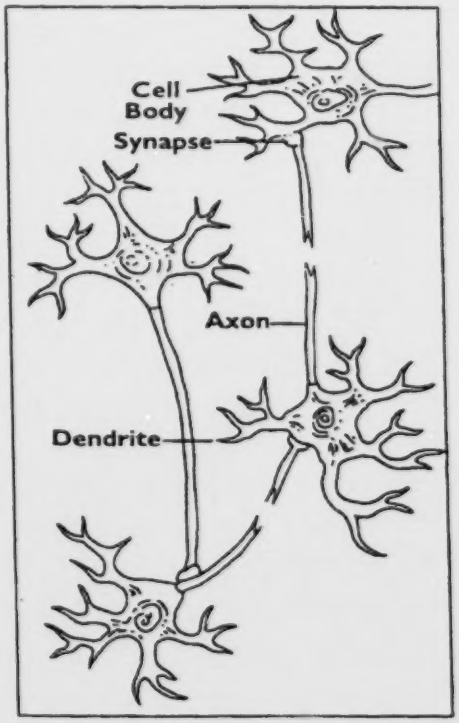


Neuron
Savage & Wolcott, 1994 p.16.

When the brain is injured, these connections may be disrupted: some are stretched and some are completely torn. There is evidence that new connections can be developed throughout life, and that "stretched" connections can heal.

However, broken connections cannot mend and the cells themselves, the neurons, cannot regenerate once dead. When an injury occurs, the clean-up process in the brain usually results in swelling around neurons, particularly around any stretched or bruised connections. Savage & Wolcott, 1994 (modified for this manual) This swelling prevents those parts of the brain from working optimally and can last a long time up to three years following an injury.

The brain is covered in a sheath, called the dura. There are many large arteries and veins supplying blood to the brain, both outside and inside the dura. If one of these blood vessels ruptures on the outside it is called an epidural



Neuron
Savage & Wolcott, 1994 p.16.

hematoma, or epidural bleed (blood above or outside the dura). If a vessel ruptures inside the dura it is called a subdural hematoma, or subdural bleed (blood under the dura). Bleeding under the dura is most dangerous for a number of reasons. It causes increased pressure in the brain, which can put pressure on and kill brain cells. The blood itself is toxic to living brain cells. A subdural bleed often means that the blood, oxygen, and nutrition supplies have been completely cut off to a portion of the brain.

Several things can happen during an acquired brain injury to cause bleeding in the brain. First, a blood vessel can rupture because it is malformed or weak (stroke). Or, if the brain's oxygen supply is cut off, then started again, small strokes can occur all over the brain. This is what happens when the individual has an "anoxic" event.

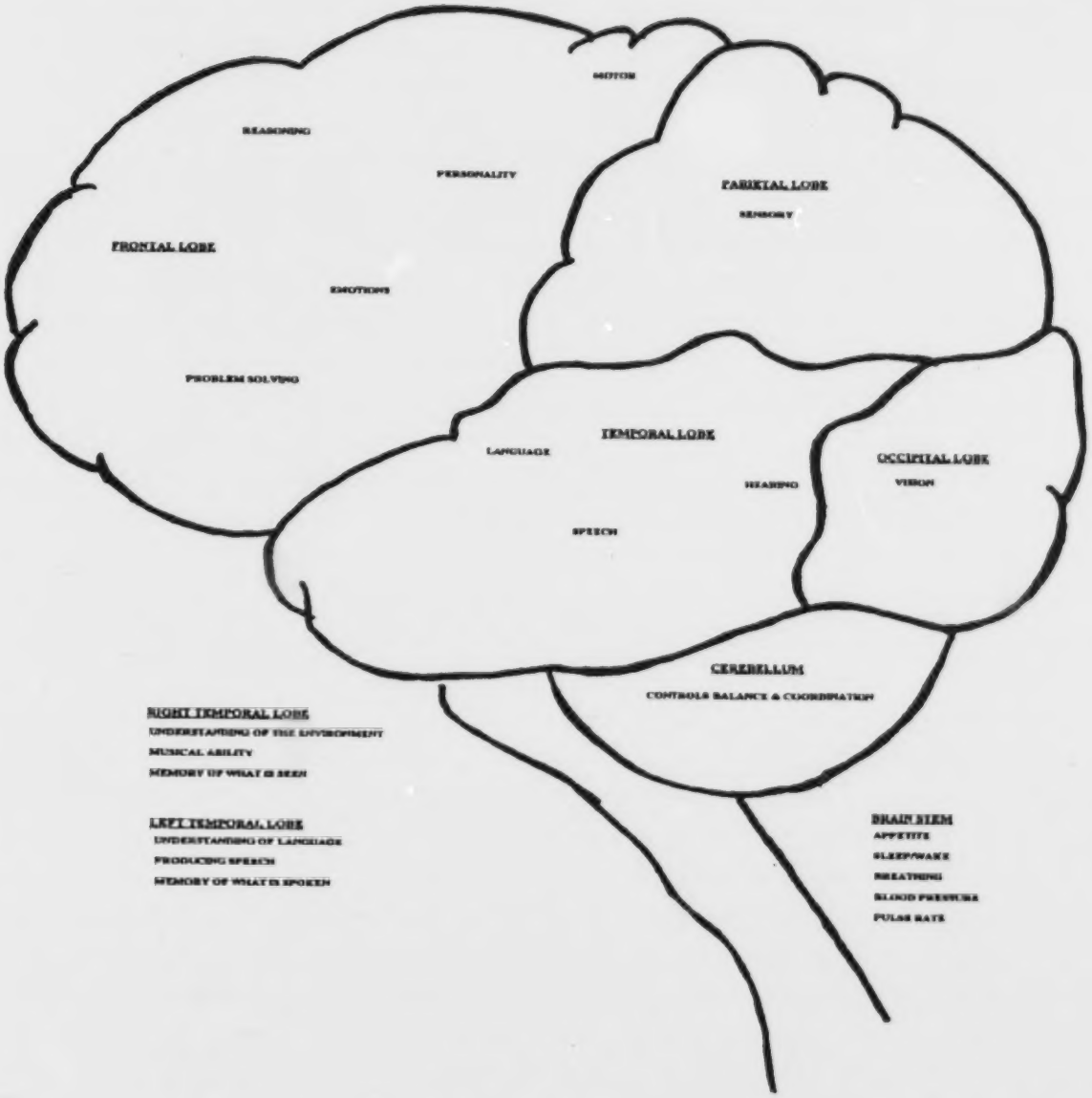
Individuals may cause small anoxic events in their own brains by playing games in which they cut off the blood supply to the brain by pressing on the carotid artery until they pass out, or by "huffing" toxic fumes.

All of the brain cells need oxygen to survive, but certain structures use much more oxygen than others. The hippocampus, a part of the brain that requires a large supply of oxygen, is involved in new learning and in the process of transferring new learning into memory. Any oxygen deprivation to the brain is likely to have a specific impact on a student's ability to learn and remember new information i.e. short-term memory

The inside of the skull, where the brain sits, is not a smooth surface, as it is on the outside. Many areas have bony hooks and knobs jutting inward toward the brain. In an accident involving rapid acceleration/deceleration (such as being hit by a car or thrown from a moving vehicle), the brain moves back and forth inside the skull at great speeds, hitting these bony protuberances.

The surface of the brain can get caught and parts of the brain can twist away from other parts. Because of the very gelatinous nature of a young child's brain, this kind of tearing can produce devastating injuries. This is why shaken baby syndrome is such a serious form of child abuse.

When the brain moves about violently inside the skull, the chances are very high that the axons will be stretched and torn. This is called a "diffuse axonal injury." Remember that the axons are the cell structures that connect one part of the brain to another. Whenever there is diffuse axonal injury, the student will have problems in learning or acting properly in situations that involve integration skills.



BEST COPY AVAILABLE

COMMON CHARACTERISTICS OF THE BRAIN INJURED

Following a brain injury, a student may experience difficulty with the common daily functions listed below. It is important to note that not every student with a brain injury will display all of these characteristics.

Cognitive functions:

- Memory, especially for new learning
- Attention and concentration
- Judgment, planning and decision making
- Ability to adjust to change (flexibility)
- Organization
- Sensory overload
- Fatigue
- Impulse control
- Distractibility
- Initiation
- Performance consistency
- Orientation to time and space
- Speed and efficiency of mental processing

Speech/Language Functions:

- Understanding of language
- Expression (word-finding difficulty, they may make up words)
- Abstract thought
- Speed of speech

Emotions/Social/Behavioral Functions:

- May not understand, there is a change in abilities
- Awareness of self and others
- Awareness of social rules
- Self control (mood swings, crying, over-reactions)
- Errors in judgment
- Difficulty understanding cause and effect
- Changes in social network and family structure

Physical Functions:

- Low energy (could be medication related)
- Difficulty with coordination, balance, and movement
- Changes in sense of smell and taste
- Chronic pain, headaches, dizziness
- Visual or auditory changes
- Seizures
- Sleep disturbances
- Fine motor coordination
- Paralysis or spasticity

Chapter 5 will discuss these common characteristics in more detail and will recommend strategies for intervention.

SUMMARY POINTS
The Brain and How It Works

- Statistics regarding the incidence of brain injury only track traumatic brain injuries and do not accurately reflect the higher numbers of acquired brain injuries. In addition, the Centers for Disease Control (CDC) do not collect nationwide data on the incidence of brain injury in individuals under the age of 16.
- The severity of the brain injury (mild, moderate, or severe) does not always equate to the level of the student's functioning.
- In understanding a student with an acquired brain injury, it is important to have a basic understanding of the functions of the brain and what happens to the brain during an injury.
- Although there are many common characteristics associated with acquired brain injury, not every student with an injury will demonstrate all of these characteristics.

BEST COPY AVAILABLE

CHAPTER III

The Relationships between Brain Injury and Learning and the Importance of Development

This Chapter:

- **Outlines the major stages of brain development from birth through late adolescence**
- **Summarizes the personal, emotional, and social changes typical of each stage**
- **Describes the main effects of a brain injury acquired at each stage of development on behavior and learning**

From birth through about age 18, children's brains are in a continuous process of change and development. As the brain grows in size and weight, adding an enormous number of cells, parts of the brain organize into centers to perform certain functions more efficiently.

These changes in the brain allow the child to grow, learn, control himself, and become "mature." The child learns to walk and talk, to play soccer and write term papers. He learns to recognize his mother, to experience different feelings, to control temper, and to work cooperatively with others.

The child moves from discovering his hands to building block structures, and mastering mathematical formulas. This process of maturation and development, and the resultant abilities of the child, is set into motion by the changes taking place in the child's brain. The brain's development is regular and predictable. The abilities and skills accomplished at one stage of development provide the foundation for the development of the later stages.

When a child sustains a brain injury, whether as the result of an accident or illness, the injury affects the process of development of the brain. Abilities that are just developing are very vulnerable, and therefore, these are most likely to be disrupted by an acquired brain injury. Because skills developed at one stage form the foundation for later-developing abilities, a brain injury sustained early in life can disrupt the appearance of skills at later periods of life.

It is important to know when a student experienced the brain injury, so that adults working with the child can better understand the developmental abilities that were most likely to have been disrupted. These areas of difficulty and inability underlie the learning and behavior problems seen in the classroom after a child has sustained a head injury.

STAGES OF BRAIN DEVELOPMENT

INFANCY STAGE: BIRTH-3

Normal Developmental Milestones

Newborns and young babies do not understand that they have an existence apart from others. Things happen to them "out of the blue," unconnected with other events. The baby is a jumble of feelings and impressions and receives information from all of his senses—the baby can feel pleasure and pain, and can make basic movements and sounds—but does not know that these sensations have names such as smelling, feeling, or moving.

The infant is not self-aware, and cannot differentiate the many experiences. The infant simply experiences a wide variety of states, and responds, with quiet alertness and comfort, or with flailing, crying agitation.

As the infant grows, he develops a sense of self as a separate being. Impressions begin to separate into distinct experiences, and begin to be integrated with each other. The baby learns that when mother's footsteps are heard in the hall, mother will soon appear

The baby also learns that he can make certain events happen: if mother does not appear, the baby will cry to make her come. In this way, the baby begins to understand cause-effect relationships. This development forms the foundation for understanding all cause-effect relationships in the future.

Emotions and emotional regulation are affected in a significant way by the brain development during this period. From a jumble of unrelated feelings, separate emotions begin to emerge and become clearly distinct experiences.

The child begins to express feelings through clearly different behaviors, and can even label basic feelings (happy, sad, mad, scared) by the end of this stage.

Once there is an understanding that certain events are routinely paired together, the infant is capable of self-regulation. He can cry for his mother and wait for brief periods without becoming despondent. The sleep-wake cycle begins to be regulated, and by the end of the 2nd year of life, the child's sleep patterns are very close to what they will remain throughout the life span.

The baby is a jumble of feelings and impressions and receives information from all of his senses.

Summary of Developmental Characteristics: Birth-3:

- Language acquisition
- Refinements in sensory and motor systems
- Regulation of sleep-wake patterns
- No understanding of cause-effect or time relationship
- Emotionally egocentric
- Symbiotic relationships with caregivers

Effects of Brain Injury: Birth-3

When a child sustains a brain injury between birth and age three, the developmental milestones described above are disrupted.

The child: 1) has trouble understanding or explaining about what is happening to him, 2) tends to get overwhelmed by experiences, and 3) situations that are most likely interesting to others of his age often are over-stimulating.

The child appears unpredictable in emotional reactions, seesawing from happy to sad, content to angry, without any apparent cause. Behavior is just as hard to predict, because It

BEST COPY AVAILABLE

does not follow logically from his emotional state.

Behavioral Characteristics After Brain Injury: Birth –3 Years

- Quick shifts from one emotion or state to another
- Impulsivity
- Use of primitive behaviors (biting, hitting, etc.)
- Lack of self-awareness
- Inability to self-regulate behaviors
- Lack of responsiveness to others

Being unable to distinguish perceptions and emotions clearly, the young child does not develop a solid understanding of cause-effect relationships. Because there is a weak connection between what the child has done and the consequences that occur as the result of the behavior(s) the child does not respond to standard punishments or discipline strategies as expected.

While young children do not demonstrate self-control or self-regulation, the persistence of these problems as the child matures presents serious difficulty for parents and teachers. Throughout life, the child who sustained a brain injury in infancy will probably need to rely on others to provide structure, support, and supervision much more than what is considered appropriate for that age.

Summary of Developmental Disruptions Following Brain Injury: Birth – 3 Years

- Disruption in the ability to regulate state of arousal and sleep
- Lack of understanding of cause-effect relationships
- High reliance on structure, support, supervision, and modulation from others
- Sleep disturbance
- Lability: moods shift dramatically and quickly
- Emotional reactions unpredictable, often labeled "irrational"

PRESCHOOL STAGE: AGES 3-6 YEARS

Normal Developmental Milestones

The preschool years bring important progress in the child's physical, personal, social, and emotional development. By age three, a child's sensory systems – sight, hearing, touch, smell, and taste – are well developed and differentiated. Motor skills – movement, dexterity, and agility – are also progressing.

In addition, during the preschool years, the child begins to coordinate these systems with each other. The child is focused on learning about the concrete properties of things: how they can be moved, shaped, stacked, and created and learns that certain things are best suited for certain activities (wheels to roll, markers to decorate, and cookies to eat).

There is a fascination with how things work, and much time is spent gaining experience with the physical properties of the world around him.

The preschooler distills these specific experiences into sets of concepts. Concepts are general principles that describe the physical world. The first concepts relate to size (big and little), amount (all, some, and none), speed (fast and slow), and personal conduct (nice and mean).

These concepts allow the child to extend control over the world and give a sense of importance to the child. The child tirelessly categorizes experiences and enjoys learning new concepts.

Behavioral Characteristics after Brain Injury: 3-6 Years

- temper tantrums
- high emotionality
- impulsivity
- primitive behaviors (biting, hitting, etc.)
- lack of concern for danger and safety
- resistance to influence or direction from parents

The limitation cognitively is that only one concept or dimension can be handled at a time. The preschooler's views about the world and the concepts that are developed are completely dependent on personal experiences. Someone is either nice or mean, depending on how that person just acted. The preschooler's thinking is thus very rigid: there are no middle-ground, no shades of gray, and no extenuating circumstances.

By the end of the preschool stage (age 6), the child is capable of thinking before acting. Actions become more and more "appropriate," not only in general tone, but also in degree. This accomplishment reflects the ability to integrate the thinking, emotion, and behavior systems.

The child can make fine distinctions among feelings, thoughts, and behaviors and can smoothly interrelate these thoughts, feelings, and actions. By the end of this stage, the child is usually able to think before acting, and is cognitively ready to begin to learn academic material in school.

Effects of Brain Injury: 3-6 Years

A brain injury acquired between the ages of three and six may affect the child's ability to organize and manage behaviors and emotions. Because the connections among the thinking, emotion, and behavior systems do not develop well, the child seems to feel things more forcefully and more immediately. When experiencing a feeling (such as tired), the child may react on that feeling by having a temper tantrum. Attempts to appeal to the child's rational side will fail, because the "rational side" has not developed. Often, emotions overwhelm the child and the child will often act in a manner that seems aggressive, out-of-control, and dangerous to others.

A child who acquires a brain injury between ages three and six does not learn preschool concepts well. These concepts include: same/different; quantity (some/all), shapes, size (big/little), and time (yesterday, next week). Mistakes in using these concepts will not pose serious problems for the child as a preschooler. Because these concepts provide the foundation for the basic academic skills of reading, writing, and arithmetic the lack of understanding is likely to become a greater handicap as the child progresses through school.

A child injured at this stage also has difficulty with executive functions, such as making decisions, judging situations, and planning stages of an activity. There is often difficulty starting or initiating activities, determining how close he is to reaching a goal, changing a plan, and knowing when a task is finished. There is likely to be more difficulty separating from parents and handling transitions or change.

Self-monitoring of behavior or figuring out how to behave in situations that are overstimulating, unfamiliar, or unclear (in the grocery store, at sports events, and at school recess or lunch) is often extremely difficult for the child to do.

Summary of Developmental Characteristics: 3-6 Years

- Very basic understanding of cause and effect relationships
- Developing ability to think before acting
- Focuses on one aspect of the situation at a time
- Emotional focus is on control and mastery
- Concrete and rigid thinking: "the terrible two's"

Summary of Developmental Disruptions Following Brain Injury: 3-6 Years

- Disruption in the connections among thinking-emotion-behavior systems
- Emotional and behavioral extremism
- "Executive function" difficulties
- Poor organization of behavior
- Immediate expression of feelings
- Temper tantrums and rigid behavior
- Poor acquisition of preschool concepts: same/different; quantity (some/all); size (big/little); shapes; time concepts (yesterday/ next week)
- Dependence on structure and organization provided by adults

ELEMENTARY SCHOOL: 6-12 YEARS

Normal Developmental Milestones

Children at this stage of development can consider several aspects of a situation at once. They can take another person's point of view. They understand that life is more complicated than the simple set of cause-effect relationships they recognized just a year ago. They now think it is "babyish" to throw a tantrum in response to a disappointment. They are capable of listening to reason and responding with understanding. No wonder this stage starts with the "sunny sixes!"

At this age, the child thinks that the intention of acts is important. There is awareness that things do not always turn out as expected or hoped-for and that the motivation or intent is what counts. The ability to pay attention to several things at once and to understand another person's point of view makes it possible for children of this age to work together on teams in school and in sports. Children are truly ready for school.

Their sensory and motor systems are refined and integrated to the point that they are able to sit in desks, with "quiet" bodies. Cognitively, the child has matured to the point of being able to understand symbolic information. This development makes it possible to learn to read, spell, and do math.

Summary of Developmental Characteristics: 6-12 years

- Robust understanding of cause and effect relationships
- Ready to learn academic skills
- Focus on effort as important
- Intention is important
- Sense of self as hard worker, smart
- Responsibility, loyality, kindness, and reasonableness are hallmarks

Effects of Brain Injury: 6-12 Years

Children who experience a brain injury during the elementary school years typically have difficulty learning new concepts. They may be able to memorize information, but fail to grasp the basic principles required for a true understanding of reading, spelling, and math. Children usually end up with a poor performance despite hard work.

Because they rely on memorization and rote learning so much, they have difficulty holding on to what they have learned and using it in new situations. They may be able to memorize a list of spelling words for a test but will not be able to spell them in written compositions.

The child who acquires a brain injury during the early elementary school years often has trouble applying rote-learned skills to creative projects. Although they may be able to read, their comprehension of long paragraphs may be reduced.

They may have a hard time making inferences, organizing new information so they can remember and use it later, and knowing how to act in spontaneous social situations. Any areas of learning weakness or disability that may have been compensated for previously will be more pronounced following a brain injury at this stage.

The child is unable to organize incoming information independently. These organizational problems make it even more difficult to hold on to new information so that it can be retrieved and used later. These basic challenges make the classroom a highly stressful environment. The child is working hard yet receives poor grades and the recommendation to "try harder."

Particularly in the early elementary grades, when children are highly focused on reading levels, spelling test grades, and mastering math facts, the child with a head injury can feel like a failure in this arena of life. Because mastery and accomplishment in school is the primary arena for self-esteem at this stage, school failure can have far-reaching effects.

Children who already have mastered the basic skills of reading, spelling, and math before the brain injury may have an uneven learning profile of strengths and weaknesses afterwards. For the child, unevenness among abilities creates mental fatigue and frustration, and time spent learning yields fewer rewards.

Often, the child's speed of mental processing is very reduced, resulting in slower learning and spotty learning of new material. Even though the child is working hard, he finds it impossible to finish class work. Children, whose learning problems are misunderstood, develop the feeling that they are just not good at school and thus begin to avoid school.

When the brain injury occurs during this stage, a child's behavior in school and during familiar activities is usually quite good. Behavior problems are more likely to occur during unstructured times. They may make poor judgment; get "carried away" during play, and easily misinterpret others' cues.

They may react to peers in an irritable or aggressive way. The child may get in trouble for fighting during recess or be teased because of their difficulties and become socially isolated or withdrawn from peers because of this.

Developmental Disruptions Following Brain Injury: 6-12 Years

- Disruption in reading, spelling, math skills
- Poor performance despite hard work
- School failure/avoidance
- Behavior problems during unstructured times
- Depression, social isolation or withdrawal from peers
- Sleep disturbance
- Fatigue

EARLY ADOLESCENCE: 12-16 YEARS

Normal Developmental Milestones

Beginning in early adolescence, children enter the last stage of major brain change and reorganization. They become able to think of the world abstractly and they are able to organize many sources of information into projects or essays that reflect their own thinking. They are able to analyze information, think logically, and present a convincing argument for a position. At this stage of life, children become capable of organizing, planning, and carrying out complicated, long-term projects over time The school system recognizes these changes by requiring children to produce papers, essays, and projects rather than simply telling back information they have memorized.

Young people of this age are developing judgment, the ability to plan, and the ability to reason independently. As a society, we recognize this maturity by allowing them to

This age group already has established personalities, they have responsible roles in the family, and they are largely responsible for their own self-care, schoolwork, and plans.

stay by themselves at home, baby-sit others, and do jobs in the neighborhood for pay. Their parents have learned to count on them to step into these roles, and teenagers are eager to assume the responsibility and monetary rewards that come their way.

Emotionally, the young teenager is entering a period of great change and growth. This means that he is often quite unstable emotionally and will often experience swings of emotion. Self-control will sometimes be good and sometimes poor.

The ability to think in an abstract way means that the adolescent is not as impressed with concrete reality so much anymore. Rather, he can become obsessed with what he imagines could happen. The ability to think of infinite possibilities is highly exciting but also can create anxiety and extremism. The pimple appearing on his face the week before the social event not only prevents the young teen from asking someone to go with him, but also can set off a chain of catastrophic thinking – he probably will never get a date and will end up loveless and unsuccessful forever.

Psychologically, young teenagers are starting to develop a clear and solid sense of identity. They tend to do this at first by being clearer about who they aren't rather than who they are. They may reject things associated with growing up, home and parents as being conventional and "not-me." They try on different styles of dress, hair, and identity, and experiments with the effect on others.

This age group already has established personalities, they have responsible roles in the family, and they are largely responsible for their own self-care, schoolwork, and plans.

Summary of Developmental Characteristics: 12-16 Years

- Considers 3 or more dimensions simultaneously
- Abstract reasoning
- Extremism
- Increasing autonomy, what I am like, what I am good at
- Beginning identity development
- Social stereotyping
- Responsibility: able to care for self, baby-sit, perform jobs for pay

Effects of Brain Injury: 12-16 Years

A brain injury sustained in early adolescence affects the adolescent's ability to continue with all of these areas of growth. The big brother who may have babysat siblings, run errands on his bike, and managed his own school and personal responsibilities is now in the position of requiring the care and supervision of others.

The youngster may not be able to return to sports, particularly team sports that require quick decision-making and organization skills. This causes a double loss for the child: the loss

BEST COPY AVAILABLE

of a primary stress-reducing activity, and the loss of a shared activity with friends.

Friends also respond to the changes in the child's "personality;" cognitive problems caused by the injury often result in being quieter, less tolerant, less spontaneous, more easily fatigued, and/or more irritable than before.

In school, adolescents with sustained brain injury often have difficulty learning new information. Usually, they are able to remember and use what was learned before the injury, but acquiring new skills becomes harder. Mental processing speed is usually reduced considerably, even in children who have had a mild brain injury. This makes it hard to learn new information, especially in a lecture-type class, where the teacher may be talking rapidly and expecting the student to take notes at the same time.

When injured at this stage they may have difficulty organizing complex tasks over time; they may do well on homework due the next day and studying for tests, but they fail to complete long-range projects. Typically, they have an uneven pattern of academic strengths and weaknesses. This kind of behavior is difficult for teachers to understand and causes a lot of fatigue and stress for the student. Fatigue and school failure often cause frustration.

It is essential to have a comprehensive evaluation of the child's pattern of cognitive strengths and weaknesses after a brain injury.

The adolescent's natural tendency to exaggerate and catastrophize often results in feelings of depression and hopelessness about ever being able to succeed again. Loss of friends, difficulty with school performance, changed status in family roles, loss of sports and other social coping strategies, and inadequate information about specific learning profile cause emotional pain for the young adolescent.

Usually, the adolescent is acutely aware of these changes, adding to his despair. It is essential to have a comprehensive evaluation of the child's pattern of cognitive strengths and weaknesses after a sustained brain injury, to educate him about his abilities, make the accommodations necessary for school success, and prevent these serious emotional problems.

Summary of Developmental Disruptions following Brain Injury: 12-16 Years

- Unevenness in cognitive profile
- New learning deficits
- Slower rate of mental processing
- Difficulty organizing complex tasks over time
- Judgment and reasoning difficulties
- Increased "frustration" response
- Depression
- Fatigue

LATE ADOLESCENCE: 16–19 YEARS

Normal Developmental Milestones

By the end of adolescence, children are able to plan, organize, think about things in a very complex way, show good judgment, respond to changes in plans flexibly, and solve problems in a sophisticated way. They have a relatively solid sense of who they are, what they like to do, and what they are good at. Older adolescents link their identity to these positive attributes; they have "grown out of" the reactionary views of the younger teenager. At this stage, teens are able to learn on their own, and most schoolwork involves self-directed study.

Adolescents are capable of true friend-ships, which are grounded in shared values, rather than superficial appearances. The primary emotional and psychological task of this period is to establish independent identity related to the major roles of adulthood: love and work. By the end of this stage, the young adult has a clear sense of his sexual identity, vocational plans, and social roles.

Older adolescents typically are employed, at least during the summer months; they transport themselves to and from appointments; and they usually have developed goals and plans for the future, at least in terms of whether they are headed to college or not.

Typically, they are becoming more calm and reflective; they have been gaining experience with abstract reasoning and so are much less prone to over-reacting and extremism in their thinking.

Summary of Developmental Stage Characteristics: 16-19 Years

- Complex reasoning and judgment
- Ability to plan and execute complex projects over time
- Solid sense of own identity based on positive identifications
- Social sophistication
- Capacity for altruism

Effects of Brain Injury: 16-19 Years

When an older adolescent sustains a brain injury, cognitive changes usually involve subtle connections and "higher order" abilities. Abstract concept formation, organization, initiation, the ability to keep track of several things at once, reasoning, and judgment abilities are usually affected.

These changes in thinking abilities are felt in subtle changes in personality, responsibility, and social behavior. The youngster may be quieter, more "to himself," more irritable with his parents, peers, or family members, and avoidant of social situations.

Usually, the older teenager is aware that his thinking is not as sharp as it was previously. He does not think well "on his feet;" he makes errors, feels vulnerable, and is afraid of making more mistakes in front of peers. He feels unsure of his ability to function independently, and when people correct or try to help, he feels humiliated and despondent.

The safest course, he may feel, is to withdraw from everyone, concentrate on schoolwork, and avoid social settings.

A brain injury can seriously interfere with social judgment and personal development and this can have ramifications for dating and the development of sexual identity. Adolescents with brain injury are prone to misinterpret the subtle cues sent out by others.

They may require more supervision and protection than is normally felt appropriate for youngsters of this age. They often put themselves in dangerous situations; for example, a young woman may accept a date with a male she does not know, without hesitating to think about the potential risks. Others may withdraw and avoid the dating scene entirely, putting off intimate relationships until later in adulthood.

A brain injury can seriously interfere with social judgment and personal development and this can have ramifications for dating and the development of sexual identity.

In school, academic problems typically come from slow rates of mental processing. Even mild brain injuries drastically reduce the speed of mental processing. For bright teenagers, who are used to functioning at a very fast and efficient pace, this aspect of brain injury is devastating. Interestingly, adolescents rarely realize that their thinking is slower than before; rather, their experience is that they are confused, or having a hard time understanding things as well as before.

They fall behind in lecture-type classes, feel overwhelmed and confused, become easily fatigued, and frustrated.

Slow mental processing can lead to the child's spending a huge amount of time on homework and trying to complete unfinished class work.

They do not have the reserve energy to think about working on projects or to involve themselves in extra-curricular activities, because they are exhausted from their efforts on the basics of schoolwork.

Older adolescents have a solid store of learning and experiences, from which to draw following a brain injury. They also have a solid sense of who they are, their likes and

dislikes, their goals and aspirations. They have a history of friendships, relationships, and involvement with others through sports, hobbies, and school-related activities.

The need to plan deliberately, the inability to resume job and schoolwork immediately with success, and concerns about the meaning of this injury on the rest of their lives, create added stress and frustration.

They are often unable to keep up with the pace of former activities, and that of peers. Often the adolescent is aware of the difference between abilities before the accident and current status. For this reason, the adolescent with a sustained injury is at risk for serious depression, hopelessness, and suicidal thinking.

Summary of Developmental Disruptions Following Brain Injury: 16-19 Years

- New learning deficits (e.g., memory for numbers)
- Mental processing speed deficits
- Inability to organize complex tasks
- Conflict between specific challenges and career goals
- Interference in developmental drive toward independence/separation
- Social awkwardness
- Fatigue
- Defensiveness regarding emotional/cognitive problems
- Depression
- Body image/social image

SUMMARY POINTS:
The Relationships between Brain Injury and Learning and the Importance of Development

- A child's brain is not fully formed at birth. In contrast to adults, children's brains undergo active development, growth and reorganization from birth through adolescence.
- These developmental changes result in qualitative changes in thinking, emotional maturity, social understanding, and behavior.
- Development takes place in stages, which follow in a generally universal order, and which build upon each other. Abilities developed at one stage form the foundation for later development.
- The impact of a brain injury on cognitive, emotional, and social abilities depends largely on the stage of development at which the injury occurs.
- Abilities, which are in the process of development, are the most likely to be disrupted by a brain injury.
- The earlier in development a brain injury is sustained, the more it will affect the basic developmental processes.
- Children may not recover quickly from brain injury; symptoms may continue to diminish for many months or years following a brain injury
- Sometimes, the major impact of a brain injury is not obvious until a later stage of development.
- Remediation should focus on teaching the child the structure inherent in learning activities and on developing strategies rather than providing "help" with academic activities.

BEST COPY AVAILABLE

CHAPTER IV

Transitions

This Chapter:

- **Introduces a broader concept of transition**
- **Provides a breakdown of issues associated with transition for the different phases**
- **Provides a time frame and strategies to address these issues**

Transition is a time of change and occurs at many points throughout a student's time in schools. As well as when a student leaves high school. This chapter is meant to assist in understanding the broader concept of "transition" issues students face and strategies for addressing these issues.

However, some students need more assistance with this process than others. Transition plans are developed to assist students who need additional assistance as they move from student activities to adult-activities, post secondary education or employment. Recovery from a brain injury can be rapid, slow, or inconsistent. It is important to review this plan frequently to meet the changing needs. Once the student's injury begins to stabilize, the frequency of planning may become less frequent. Transition plans for students who have sustained a brain injury need to encompass <u>all</u> of the various transitions starting from the time they have their injury to the time they graduate.

All students transition. However, some students need more assistance with this process than others.

PERIODS OF TRANSITIONS THAT NEED TO BE ADDRESSED

- Undiagnosed head injury to diagnosed head injury
- Hospital/rehabilitation setting to home
- Home to school
- Activity to activity in the classrooms
- Class to class
- School to school
- Grade to grade
- Secondary education to post secondary activities.
- Transition from being a person without a brain injury to being a person with a brain injury
- Transition from medical or rehabilitation setting to home/community

Transition planning needs to begin as soon as a child is diagnosed or identified as having a brain injury. Not all individuals with sustained brain injury are admitted to the hospital but may be seen in the emergency room and released therefore the potential for consequences that may impact social, emotional, and academic situations may not be recognized. Regardless, following diagnosis and when the student is returning to pre-injury activities, there are numerous considerations for both home and school.

ISSUES FAMILIES FACE AND NEED TO ADDRESS IN THE TRANSITION HOME

- Grieving is a cornerstone issue. The family and the student are grieving the person this student once was. This grieving process is on-going and will be experienced with the passing of different

milestones, (e.g. moving into the next grade level, graduation etc.).

- Families are not sure what to expect next.
- There may be a lack of communication from the medical community regarding what the child and family will experience once the child is home.
- Families may lack knowledge about brain injury.
- Families continue to have to deal with the everyday life, which can be hectic even without dealing with a child with a brain injury.
- Every family member is likely to be physically, emotionally and psychologically exhausted.
- Siblings often feel left out or resentful that so much time is now dedicated to the sibling who has been injured..

STRATEGIES FOR MAKING THE TRANSITION FROM THE HOSPITAL TO HOME SMOOTHER

Hospital staff is responsible for the following:

Immediately

- Allow the individual who has been injured to be an integral part of the planning process.
- Acknowledge that families are overwhelmed; help them to prioritize.
- Build in a time to practice the transition before it actually occurs.
- Make sure siblings are involved.
- Set up the home environment to accommodate the individual, emotionally, cognitively and physically.

On-going

- Allow everyone in the family time to grieve, including the individual with the injury. Remember, not everyone grieves at the same pace and in the same way; allow for these differences and do not judge another person's method of grieving. Do not assume that a parent who is not talking about sadness, loss, and disability is "in denial." Support a parent's optimism.
- Support groups can be helpful. They can provide support from others who have been there and truly understand (see Appendix). Offer resources for counseling or consultation from someone who is knowledgeable about and has experience in brain injury treatment.
- Provide families with clear and concise information; the more they understand the less they will fear.
- Provide resource materials for teachers and other school staff; become a good resource for the family
- Realize that school personnel will face many of the same issues that families do. If they knew the child prior to injury, they too will experience grieving. School personnel generally lack knowledge and training regarding brain injury and because of this there is often a great deal of fear regarding what will be expected of them when the student returns.

It is important to note that children with brain injuries often go undiagnosed or are misdiagnosed. Common misdiagnoses are attention deficit disorder and learning disability. The characteristics of these diagnoses can look very similar to brain injury; however, the strategies for addressing issues are different.

COMMON DIFFICULTIES IDENTIFYING STUDENTS WITH BRAIN INJURY IN THE SCHOOL SETTING

- May not be diagnosed
- May be misdiagnosed
- Lack of knowledge of the effects of brain injuries
- Effects of brain injuries can be very subtle
- When an injury occurs at an early age, there may be no signs of difficulties until the student is older and required to use higher cognitive skills Strategies for identification

STRATEGIES TO ASSIST SCHOOL PERSONNEL IN THE IDENTIFICATION OF STUDENTS WHO HAVE HAD A BRAIN INJURY

- Educate pre-referral teams at the schools about brain injury signs and characteristics to facilitate proper identification
- In-service training for all school personnel regarding brain injury.
- At the school level, develop a strong identification and referral process that can include an annual health up-date form for parents to complete that asks questions about head trauma and brain injury.

TRANSITION FROM HOME TO SCHOOL: ISSUES TO BE ADDRESSED

By Hospital Staff

- Lack of communication between the hospital or rehabilitation setting and school personnel as the student is returning to school.
- School personnel will have some fears regarding what will be expected of them in terms of serving the student.

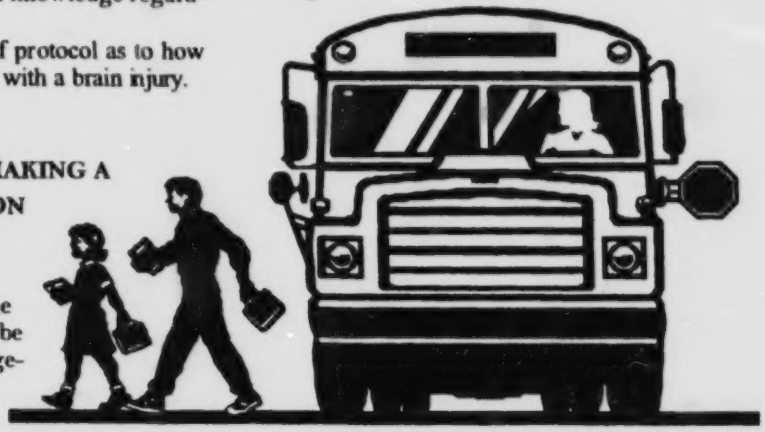
By School Personnel:

- The student's classmates may go through a grieving process of their own.
- Often there is a lack of knowledge regarding brain injury
- Often there is a lack of protocol as to how to work with a student with a brain injury.

STRATEGIES FOR MAKING A SMOOTH TRANSITION BACK TO SCHOOL

Immediately

- Communication is the key. Don't wait to be invited to a discharge-planning meeting at the hospital; school personnel need to ask to attend.
- One person from the school needs to be responsible for gathering information from doctors, speech therapists, psychologists, occupational therapists, physical therapists, social worker, and other specialists who have been involved with the student outside of the school setting regarding the student's injury. Remember that documentation is helpful, but is not the definition of who the student is. When a student is first injured they are making improvements and change rapidly; documentation becomes quickly outdated.
- Family members and school personnel should meet as soon as possible to establish clear expectations and to develop a plan, making sure the student is the central focus.
- If the student qualifies for special education an Individualized Education Plan (IEP) will need to be developed. However a student with a milder brain injury may need a 504 Plan. In either case, the development of a good plan is essential prior to returning to school.
- The Plan becomes a working contract between family, youth, and school personnel and should be developed prior to returning to school
- The Plan assists in assembling a team which includes the student, family, rehabilitation providers, and school staff.
- The Plan should be reviewed several times during the initial months following return to school and quarterly every year following.



- The Plan provides a hands-on document stating goals and objectives and keeps everyone equally informed.
- A well-written Plan can become a self-advocacy tool for families and youth.

School personnel & family can develop an informational notebook to include:

- Plans for transitioning back to school
- Description of circumstances surrounding the injury
- Date of injury
- Description of family environment
- Description of rehabilitation program: PT, OT, and ST etc.
- Description of current strengths and supports

On-going

- Within the student's class, provide an opportunity for the student's classmates to talk openly about the injury and to eliminate some of the fear and unknown elements classmates will be facing.
- Consider establishing a brain injury team at your school (see chapter 7 on how to establish a team).
- Provide annual in-service training for school staff about brain injury.

TRANSITIONS FROM ACTIVITY TO ACTIVITY WITHIN CLASS

Current teaching practices often incorporate rapid transitions in the classroom to keep the students' attention and students with brain injury often struggle with these changes from one activity to the next. Having a student with a brain injury in your classroom does not mean you can no longer implement this teaching style. A few accommodations for the student with the brain injury can make the difference between frustration and facilitating their ability to learn.

A few accommodations for the student with a brain injury can make all of the difference in facilitating their ability to learn.

Issues that need to be addressed

- A student's speed of processing may be slowed due to the injury.
- Noise and activity, which often accompany transition may be overwhelming to the student with a brain injury and may cause them to overreact to the overabundance of auditory and visual input.
- Fatigue can be an issue and if there are rapid transitions with few or no breaks in between activities this can be problematic for the student with a brain injury.
- When doing in-class activities, which are active in nature, the student may have difficulty filtering out noises (e.g. other students talking).

STRATEGIES FOR SUCCESSFUL TRANSITIONS FROM ACTIVITY TO ACTIVITY

Daily

- Simply helping the student to get organized by writing the information on the board may not be enough for students who have had a brain injury. Writing the schedule of activities on an index card with time frames for the student to keep with him may be helpful. This will allow the student to anticipate upcoming transitions. Some students will require even more support than this, for example, a picture schedule for young students. When announcing an activity change, allow time for the student to wrap up what is currently being done so that the student can listen completely to what is being said. It can be very difficult for a student with a brain injury to have to multi-task and divide attention simultaneously.

- Allow the student to wear earplugs. These filter out background noise yet allow the student to hear instructions.
- Have the student sitting and participating in the least distracting section of the room and be sure to look for visual as well as auditory distractions.
- Allow for rest breaks when the student is overloaded and potentially fatigued.

CLASS-TO-CLASS TRANSITIONS

Transitioning from class to class may become more problematic as the student with a brain injury moves through the various grade levels. When they are in middle and senior high, they usually change class minimum of every 45-90 minutes. Not only does the subject matter change, the student is faced with several teachers a day, each with a unique style of teaching and must find their way to a new classroom through a potentially confusing maze of hallways and other students.

It is important to note that as early as second and third grade, students may be changing classrooms and teachers up to three to four times a day.

ISSUES TO BE ADDRESSED

- Transitioning from subject to subject (speed of processing changes may be slower).
- The process of getting to the next class (a barrage of external stimuli such as noise and congestion in the halls may be very overwhelming for the student.
- Difficulty remembering a particular teacher's expectations and style due to memory deficits.
- Teachers giving several instructions at once, e.g., "take out your homework assignments and turn to chapter 3 page 150."
- Not remembering to bring all of the necessary items needed to the appropriate class.

STRATEGIES FOR EASING THE TRANSITION FROM CLASS TO CLASS

Daily

- For the elementary age students, allow enough time for the student to put away the previous materials and to pull out the next subject's materials before beginning the class
- For secondary age students, the same applies. Allow the student time to get settled before giving instructions.
- Give instructions one at a time and check for understanding.
- Provide the student with earplugs to filter out noise in the hall or classroom.

Beginning of the Quarter/ semester,

- Create a checklist of all subjects and write a brief description of expectations of the teacher so that the student has something in writing to refer to.
- Create a checklist regarding all necessary materials for a given class so that the student does not forget to bring things.

On-going

- Organization will be key. Work with the student to create an organizational system they can understand which will allow for easy access to all information related to a given subject

TRANSITION ACROSS GRADE LEVELS AND TO DIFFERENT SCHOOLS

"Every September I feel like we have to start over again. Things that helped my child in school last year have to be worked out again." Parent (Wolcott, Lash, Pearson, 1993)

This statement indicates the struggles parents and students with brain injury face when transitioning from grade levels and schools. Although an IEP or 504 Plan may be in place, it often does not translate into functional, hands-on interventions, which will assist the student with day-to-day activities.

Again, it comes down to communication and teamwork to create an effective learning environment.

BARRIERS TO SUCCESSFUL TRANSITIONING FROM GRADE LEVELS AND TO DIFFERENT SCHOOLS

- Lack of communication from current teachers to future teachers and lack of communication from one teacher to the next, especially as the student reaches the secondary level make this a difficult time for the student.
- There may be a lack of time for teachers to obtain necessary training about brain injury.
- Teacher selection may make the classroom experience easier..
- There needs to be frequent review and planning meetings.
- Increased academic challenges with increased cognitive demands may be difficult.
- The increase in the level of responsibility may be beyond the capability of the student with a brain injury.

STRATEGIES FOR INCREASING A SUCCESSFUL GRADE LEVEL AND SCHOOL TRANSITIONS

Before the start of the next school year

- Develop a worksheet or workbook which can be revised or updated and given to new teachers see appendix).
- Begin planning for the next year early. Teacher selection is critical to a student with a brain injury. If a student requires a great deal of structure, it will be important to find a teacher who has a style that accommodates this need.
- Provide in-service training for new teachers, and include the student, family and past teachers in planning and/or presenting.
- Allow the student to meet the teacher before the school year starts to help reduce anxiety.
- Provide parents and the student with information regarding the structure of the school; do not assume a parent already knows. Provide them with contact people and develop a workable process for addressing concerns, transmitting information, and assuring good communication.

On-going

- Conduct IEP and planning meetings as often as needed to keep up with the changes the student is making. This will allow for more effective communication among the team members as well.
- Use the IEP and 504 Plans effectively, make them functional, be flexible, and train teachers on strategies that have already worked well.
- Keep perspectives in of student, family and school mind.
- Keep all lines of communication open (for example, use a notebook that goes between home and school for which the student will be responsible, schedule regular meetings, phone calls, etc.)
- Do not assume the student with a brain injury is not trying hard enough. It may be that the student's disability is making it hard for them to take responsibility at the level of her peers. A classic example is writing down homework assignments and turning in homework assignments. The student will likely need help developing an organizational plan and strategies to assist her in becoming independent in these areas.

TRANSITIONING FROM HIGH SCHOOL TO ADULT LIFE

This process is mandated to start at age 14 for students with an IEP. The Plan is to be functional in nature, and guided by the student's interests. The transition process allows the student to begin career development while

having the security of school. It enables the student and her parents to begin developing a realistic picture of what vocations may be possible following high school. For many families this may involve grieving dreams they once had for their child and now creating new dreams with different expectations. In the best case, the student and their family will teach school personnel about the student's interests, and a talented, creative school team will be able to generate ideas for matching these interests with vocational options.

COMMON PROBLEMS TRANSITIONING FROM HIGH SCHOOL TO ADULT LIFE:

- Fear can become a factor for the student, family and school personnel.
- There may be some uncertainty regarding goals. Students, parents, and teachers may have difficulty accurately assessing a student's abilities as they relate to post-secondary activities.
- Students, parents, and school personnel may lack awareness of available adult support services e.g. vocational rehabilitation, independent living skills training, and residential supports.
- School vocational programs may involve a standard set of pre-established placements, which may not match the student's individual interests, skills, and support needs.
- When planning does occur the student may not be actively involved in planning.
- Inadequate time spent in a placement to adequately assess their ability to do the job and to figure out the right accommodations. Students have had a brain injury need several months to one year to adequately assess their abilities.

STRATEGIES FOR FACILITATING A SMOOTH TRANSITION FROM HIGH SCHOOL TO ADULT LIFE

- Become knowledgeable about adult support services available in your community.
- Use the IEP or 504 Plan as an effective/functional transition tool.
- Take advantage of the years in high school to develop post-secondary education or vocational goals based on the student's interests and talents.
- Provide the student with hands-on experiences to facilitate appropriate career development goals.
- Access employment programs the school has to offer.
- Develop a transition plan that is all-inclusive: work/school, home and community.
- All transition planning needs to be centered on the student.
- Develop a team and an action plan to ensure that the transition plan is carried out. Make sure to involve the parents and student in all aspects of this plan. Parents need to be provided the opportunity to learn about their child's abilities along with the student and the education team.
- Make sure there is adequate supervision

Needed adaptations at job sites.

- Connect the student to the Department of Vocational Rehabilitation earlier in the student's high school career and prior to graduation from high school to ensure a continuation of support.

SUMMARY POINTS:
Transitions

- The concept of transition needs to be broad and include the parents and students when looking at the needs of students with brain injuries
- The student who has had a brain injury and their family should be involved with strategy development and planning meetings
- Hands-on/experiential based lear ning is most effective for students with a brain injury.

Chapter V

Changes in Learning and Compensatory Strategies

This Chapter:

- **Describes the range of changes possible following brain injury in:**
  - **Sensory and motor systems**
  - **Speed of mental processing**
  - **Cognitive abilities**
  - **New learning**
  - **Memory**
  - **Attention and concentration**
  - **Reasoning, problem solving and judgment**
  - **Organizational skills**
  - **Emotions, social skills and behavior**
  - **Energy level**
- **Suggests compensatory strategies to work with these changes**

No matter how a brain injury is medically classified – mild, moderate or severe – it is likely that the student will experience some degree of change in ability in several of the areas described in this chapter. The student's awareness of these changes and his perception of the need for the compensatory strategies suggested in this chapter will vary from student to student.

As a teacher you will need to evaluate the student's ability to work independently with compensatory strategies.

Younger students, and those injured at early developmental stages, are least able to learn and implement techniques independently. When questions of ability persist a neuropsychological evaluation, including standardized tests and informal observations, may clarify which strategies would be most effective.

This neuropsychological evaluation can help to identify how different parts of the brain are functioning, and it can help determine how much support the student will need. Neuropsychological evaluations are done by a neuropsychologist and school personnel may only suggest to parents that they may want to obtain this information. It should never be requirement for a student to receive special education or accommodations at school.

Even if self-awareness is reduced, there is benefit to helping the student identify and understand which tasks are easy and hard, which are liked and disliked, and what are ways to make tasks easier. Building this awareness and implementing approved strategies will be likely to assist the student to generalize these strategies to other areas of their life. Learning self-advocacy and maximizing independence are essential to life success following brain injury.

It is important that teachers experiment with compensatory strategies. It is equally important that the school team communicates and collaborates with each other, the student, the parents, and the rehabilitation team about which compensatory strategies are effective.

Because change is inherent in the situations students encounter, as well as in their developmental process, strategies will need to be evaluated periodically, and fine-tuned or altered throughout the student's school and adult life.

SENSORY AND MOTOR CHANGES

Brain injury may leave residual weakness in perceiving sensory information, integrating one sensation or sensory system with another, and responding to sensory information. Children often are hypersensitive to sounds, touch, or light after a brain injury.

Very frequently, they have difficulty perceiving light touch to the hands and fingers, and they cannot interpret sensation clearly based on touch alone, without looking. Children who have trouble perceiving or responding to sensory input obviously will be at a disadvantage when they have to integrate information coming from different sources.

In the motor area, children often have a hard time correctly grading their responses. This inability to grade their motoric responses sometimes causes them to over-respond, or under-respond motorically. You can see this in written work in school: a child may "sketch" his letters; apply so much pressure that the paper tears; rework some letters so that they are dark and overdrawn; or scribble his letters.

Encourage participation in recreational and sports activities that develop motor coordination and use both sides of the body.

It may be impossible for him to apply consistent pressure and smoothly grade the fine motor responses in order to produce a more acceptable product.

Disturbances in the sensory and motor systems, besides requiring intervention in their own right, also affect the child's energy and availability for "higher order" cognitive activity.

Sensory/Motor changes Teachers may observe

- Poor balance
- Poor coordination
- "Messy" written work, with a lot of erasures or reworking
- "Odd" behaviors, like standing up to read or write
- Leaning heavily on desk or against black board
- Increased distraction during activities like watching a movie, slides, or looking at the blackboard
- Sensitivity to light Hypersensitivity to sounds and crowded or noisy environments

SENSORY/MOTOR CHANGES: STRATEGIES FOR INTERVENTION

- Encourage participation in recreational and sports activities that develop motor coordination and use both sides of the body. Usually, individual sports, such as swimming, bowling, tae kwon do, bike riding, jogging, track and field activities, and skiing are much easier and more successful for students with an a brain injury. Among the team sports, baseball is the best, as the child can practice individual skills and routines.
- Encourage and practice activities that use reciprocal movement patterns, including bike riding, swimming, running, kicking a ball, serving in volleyball, etc.
- Allow the student to stand up and lean on his table when reading, or lie on the

BEST COPY AVAILABLE

floor to do work. These positions allow for maximal alertness, and relieve the balance/ instability problems that these students often have.

- Encourage break times during the day in which the child can participate in "heavy work" activities. These activities give deep pressure to the joints, help reduce sensory defensiveness, keep the child alert, and assist in the development of controlled, graded movements. Included are:
  - standing "push ups" against a wall or blackboard
  - Be sure that the student's table and chair provide optimal support, to reduce the amount of energy devoted to maintaining balance. A firm seat with arm rests and table at elbow level often are optimal.
  - Encourage the student to help with activities that involve pushing and carrying such as pushing open doors, carrying boxes or stacks of books, etc. when these need to be done in the classroom.
  - In gym, the following activities can help children with sensory and motor weaknesses:
    - activities involving hanging or climbing
    - jumping on a trampoline or a hard surface,
    - catching and throwing heavy balls,
    - climbing, pulling and hanging activities,
  - Taking a vigorous shower in the morning helps the child to wake up and be ready for school activities.

Disturbances in the sensory and motor systems also affect the child's energy and availability for "higher order" cognitive activity.

MENTAL PROCESSING CHANGES

Mental processing speed is the speed with which we take in, understand, integrate, and respond to information. It is a mental function that is highly sensitive to brain injury. Even for children whose IQs return to average or above average following a brain injury, typically the mental processing speed index is below the 15th percentile. If the brain injury has been mild, or if the student is an adolescent, slow mental processing may be missed in the typical school-based assessment.

An adolescent will often adjust his behavior to "cover up" cognitive problems following a head injury, so it appears that he is "fine." Teens are rarely aware of a decrease in their mental processing speed *per se*, rather, their experience is that they are confused or having a hard time understanding everything as well as before.

Especially for students who are in 4th grade or beyond, slow mental processing rate can be devastating to school performance. In earlier grades, teachers tend to give directions and information in single-statement form, with long pauses between statements so the student can "digest" what has been said. They repeat information often.

From about fourth grade on, however, teachers give students longer amounts of information at a time, the information is not repeated as often, if at all, and often the student needs to take notes and listen at the same time. The student with slow mental processing works on one piece of information, while the teacher has gone on to the second, third, or fourth points. By the time the student tunes in again, he has missed so much that the information he hears is out of context. He begins to develop a spotty information base, and has a set of notes that are incomplete and hard to reconstruct afterwards.

It is easy to test mental processing speed; the school psychologist can provide valuable information about the student's ease, speed, and efficiency of mental processing. The speed of mental processing, unless gravely affected by the sustained brain injury, is often not easily observed in informal interaction with the child or adolescent. Instead, the effects of slow mental processing in everyday life are seen indirectly in the following ways:

Mental processing Changes Teachers may observe

In young children: 2-11 years

- Confusion
- Difficulty making transitions from one activity to another
- Irritability
- Failure to carry out instructions
- Student looking "blank"

In older children and adolescents

- "Short fuse;
- Poor frustration tolerance
- Unwillingness to engage in conversation
- flying off the handle"
- Spotty learning of new information
- Difficulty "remembering" details from a conversation (the details were never learned in the first place)
- Difficulty integrating information from several sources
- Difficulty doing more than one thing at a time
- Poor task persistence
- Unwillingness to engage in multi-step activities
- "Motivational" deficits
- Resistance to novel tasks
- Difficulty translating thoughts into flexible, responsive and "appropriate" behavior

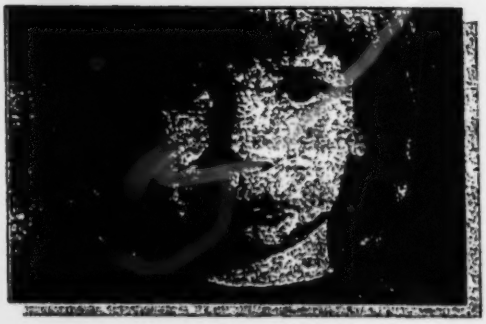
SLOWED RATE OF MENTAL PROCESSING

Strategies for Intervention

- Shorten the length of communications to the student, focusing on the essential or most important parts.
  Example: "Get your Social Problems book and turn to page 26."
  Not: "OK, now before we watch these slides, I want you to get out your Social Problems book, because we are going to be going over the material we discussed yesterday on poverty in the cities, and this slide presentation compares the rates of poverty in five major U.S. cities over the past ten years. So turn to chapter 2, page 26, and lets review what we did yesterday."
- Give time after a long direction or between parts of a direction for the child to "digest" what you have said.
- If the child appears "blank" or is not doing what you have asked, repeat the main points. Do not elaborate or add details.
  Example: "Your social problems book, page 26.
  Not: "You remember yesterday we were discussing this issue of poverty in the cities, and Bill asked how things had been changing over the past ten years, so the slide presentation will probably relate some interesting information about that very point, but I want you to have the bar graph in your book to refer to as we are watching these slides."

Reduce other distractions, so your student does not have to screen them out or share his/her focus with anything but your words.

- Try not to pressure your student urge him to "hurry up", or get exasperated. If you need something done quickly, better not to assign it to him/her.
- In school, there should be a waiver of all timed requirements on in-class assignments as well as on classroom tests. Apply for a waiver of time limit on standardized tests if allowed by the publishing company. Extra time should be scheduled routinely for the student to finish projects during the school day (for example, a study hall period), so that she/he does not have to finish work during lunch or recess, or bring it home.
- It should be expected that the student would take longer to do things. He should not be penalized for this need by missing out on other activities ("You can finish this during recess"), feeling like a burden to the class ("We can go onto reading after Jack is finished"), or having a desk filled with half-finished projects.
- Children with a slow rate of mental processing often perform much better if they do not have to do several activities at the same time. When possible, give the student an outline of course lectures and copies of slides, so that he/she does not have to take notes and listen to lecture material at the same time. A good note-taking buddy could be assigned to take notes on NCR notebook paper and give the student the notes at the end of each class. This will greatly enhance the student's ability to follow and learn all of the information in class and will leave him with more meaningful notes.
- Do not respond to negative behaviors (e.g. irritability, "short fuse") by trying to reason with the student. Instead, highlight main points to the direction or describe desired behavior.



- As much as possible, pre-prepare materials for the student, so that he can spend effort and energy on the project itself, or on the conceptual parts of the activity. For example, assign another student to cut out pictures to be used in a collage, and ask the student who has had the brain injury to place them on the backboard.
- Teach the student how to highlight dense text material, and use study-hall time to highlight and outline lecture or text material with the student.

UNEVENNESS AMONG COGNITIVE ABILITIES

The single hallmark of a brain injury on a child's performance is unevenness in abilities across different settings over time, and across different content areas. Because most people are consistent across settings, time, and skill domains, this extreme variability can be highly confusing to family, teachers, and friends.

It is not unusual for a student with a brain injury to have performance on cognitive measures ranging from below the 1st percentile to the 95th percentile. This large variability means that certain types of performance will come easily and automatically for the student, while other areas of performance are labored or highly unsuccessful. The pattern of strengths and deficits may not be "sensible" or logical, given what we know about the normal development of academic skills.

BEST COPY AVAILABLE

Thus, a student may be above grade level in some areas (i.e. knowledge of facts) and behave like a child several years younger in other areas (contributing to a class discussion). Wide variability among skill domains is particularly true of student injured as adolescents, and therefore these students often are misread as being unmotivated, disinterested, or not working hard enough.

Unevenness in the cognitive and learning profile is often revealed on the testing performed by the school personnel, but because we are typically trained to disregard scatter among performances, it may not be interpreted correctly. Look at the individual cognitive and achievement subtest scores for a student with a brain injury: typically, there is wide "scatter" either within sub-tests or across sub-tests, but only the "overall" average performance is discussed.

The single hallmark of a brain injury on a child's performance is unevenness in abilities across different settings over time, and across different content areas.

Cognitive Changes Teachers may Observe

- Failure in certain school subjects with success in others.
- Good performance on tests, but poor performance on homework or class work.
- Good performance on class work or homework but poor performance on tests.
- Inconsistent classroom participation across days.
- Student seems involved, motivated and "with it" in one class but not another.
- Lack of "common sense" or failure to generalize.
- Teachers cannot reach a consensus about the best ways to assist the student in school.
- Student is not succeeding at a level expected based on his/her "intelligence."
- Student is frustrated by and/or avoidant of certain situations or

UNEVEN COGNITIVE ABILITIES: STRATEGIES FOR INTERVENTION

- Get a good pediatric neuropsychological or a multidisciplinary assessment of your child's cognitive abilities from a team of individuals with expertise in pediatric acquired brain injury. Ask your school psychologist to contact the brain injury specialists in your district or to consult with individuals in the private community who have this expertise.
- Create a team of teachers who are non-defensive, who understand the student's profile, and who are interested in trying to discover ways to build upon strengths and work around areas of challenge.
- Expect to find unevenness across abilities. Educate the student's family, teachers, and therapists on the student's team to understand that such unevenness is characteristic of the student. It does not mean that one teacher is better than another, or that one setting (home vs. school) is better.
- Make the student aware of his own areas of personal strength and weakness. Students often are very distressed and frustrated by their inability to perform. Especially for teenagers, these inconsistencies can be quite depressing. The student often feels he is "dumb" or concludes that academic achievement will be impossible for him. When his school team understands that he has some solid strengths that can be used to help him succeed in school, and they convey this information to the student, he can regain his courage and his investment in school.

BEST COPY AVAILABLE

- Help your student and his/her family to recognize the importance of good rest, good nutrition, and a regular schedule to optimize his/her consistency of performance on a daily basis.
- Evaluate the student's schedule carefully, and make sure it has a good mixture of non-academic subjects.
- Use real materials and hands-on activities as much as possible to supplement written or lecture material. Encourage the child to read aloud when studying text. This gets the information processed by different centers of the brain, without taking more time. Create learning opportunities that bring the information into the child's brain in different modalities.
- Choose the student's courses in line with his/her cognitive strengths. As much as possible, create a curriculum that is maximally functional for the particular child: one that teaches to strengths and downplays weaknesses.

  Example: Kelly had very good abilities to follow and track discussions and summarize the "gist" of complex information orally. She had very poor written language skills, however, and had failed her comparative literature and algebra courses. Modifications in her literature curriculum allowed for her to take tests orally, and she dictated her semester paper and her final examinations to a typist. She dropped out of algebra, although her counselor protested that she was "smart" enough to take the regular math curriculum, and enrolled in a functional math class focused on estimating the cost of purchases, checkbook management, and basic measurement.
- Arm yourself with knowledge of your student's strengths and difficulties and gently guide her/him into self-knowledge. Students will gravitate toward experiences and interests that are in line with cognitive strengths. Examine the student's interests carefully to see what vocational possibilities they suggest.

Following a brain injury, learning will be most efficient if it occurs in a multi-sensory or multi-modal fashion. That is why thematically-organized curricula work best for the student with brain injuries

NEW LEARNING

When an individual sustains a brain injury, the abilities that come back most quickly and strongly are those that were securely established before the injury. One reason for this is that after something is learned, practiced, and remembered, it is stored in many different parts of the brain. When individuals try to recall it, they have several different avenues to try; if for some reason the usual approach fails, the information can be accessed in another way.

In order for information to be encoded in memory initially, certain pathways and centers in the brain must be intact. These centers are very vulnerable to being injured.

Following brain injury, learning will be most efficient if it occurs in a multi-sensory or multi-modal fashion. That is why thematically organized curricula work best for the student with a brain injury

If the student is exposed to the same theme repeatedly throughout the day, engaging different skills (writing, counting, collecting, drawing), he will be constantly rehearsing the newly learned information throughout the day. He will be coming at the information slightly differently in different classes (language arts, math, science, art), and these variations will create multi-modal learning situations.

Learning Changes Teachers May Observe

- Academic testing and IQ are often "average" with poor performance on assignments and class work.
- Verbal IQ is higher than Performance IQ
- Rote learning may be unaffected
- Incidental skills learned in one setting do not "generalize" to other settings
- .Learning is impaired.
- Student does not go |"beyond the information given" to make inferences or predictions
- Student does not put facts together to form a gestalt or "big picture.".
- Student may appear to have "memory" difficulties.
- Student is capable of demonstrating skills or mastery one day but not the next.

NEW LEARNING: STRATEGIES FOR INTERVENTION

- Teach the student strategies for approaching and completing complex and novel tasks. These may include: breaking the task down into sub-steps; outlining wordy material; high-lighting; reading questions first; reading and listing titles and subtitles. Use the same strategy in different situations to make its use more automatic.
- Highlight and rehearse most important information.
- Preview material to be learned in the upcoming week to increase familiarity with context. Tell parents what chapters or content areas will be learned in school so that they can look for opportunities to discuss the information or familiarize the student with the content at home.
- Employ multi-modal strategies when presenting new information: watch a move, read a book, listen to the book on tape, make a clay model, apply the new information to different contexts, etc.
- sTry to increase redundancy and decrease the amount of novelty across learning environments. If possible, teach thematically across disciplines.
- Involve the student in structured social settings. Practice skills and assign the child to the same task or role every time he is working in a group.
- Very often, these students have slow rise time. They do better when they have a chance to work with the materials for a while to warm up to the requirements of the activity. Teach the student to work one or two practice items before beginning a test or seat assignment.

Work on new skills or new information one piece at a time. Do not give the student several activities to perform at once. For example, simplify an editing exercise by telling the student to go through the paragraph and insert capital letters at the beginning of each sentence with a red pen. Then, go through the paragraph a second time and insert capital letters for all proper nouns. Finally, put in end of sentence punctuations with a green pen.

MEMORY

Memory and learning involve the encoding, storage, and retrieval of information and experience (Savage and Wolcott, 1994). Often memory of the past (long-term memory) – information and events – is retained following brain injury. Initially this may be

perceived as a sign of little or no loss of memory. However, memory for new learning and experience (short-term memory) frequently is affected.

Loss of ability to organize new information so that it can be effectively recalled is common. This presents a substantial challenge following brain injury. Memory skills are further diminished by the presence of fatigue, pain and stress.

Our perception of who we are is in great part determined by memory. If the student does not remember his new experiences or learning following brain injury, the richness of his life is reduced.

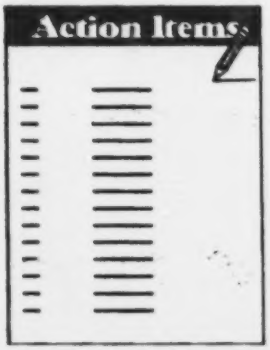
Breaking instructions and assignments into manageable pieces, and using strategies to enhance memory will be especially important in addressing challenges in this area.

Memory Changes Teacher s May Observe

- Doesn't do as directed
- Understands only parts of instructions or statements
- Has difficulty following two or three step directions
- Does work incorrectly or incompletely
- Does not know what homework is assigned
- Does not turn in homework, or turns it in incomplete
- Has difficulty recalling information recently learned
- Doesn't recall participation in activity or events
- Recalls pre-injury or overlearned information or activity
- Forgets locker combination
- Does not recall specifics of an activity, for example having eaten a meal
- Wanders or loses the way in the school, home or community
- Requires multiple repetition of instructions, information, activity
- Does not know names of classmates

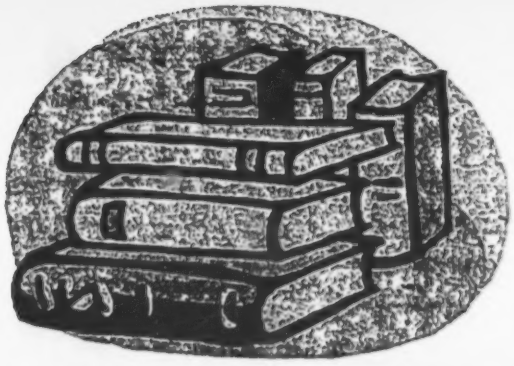
MEMORY: STRATEGIES FOR INTERVENTION

- Maintain a consistent routine
- Limit the number and frequency of changes in routine
- Give information in several ways: verbal, written, demonstration, pictures
- Limit the amount of information given at one time
- Teach the student to use a daily planner (your assistance using it may be needed)
- Use self-questioning, "wh" questions during reading and discussion (who, what, when, where, why, how)
- Develop checklists to help the student remember schedule, routines, etc.
- Give examples of homework problems/assignments.
- Give the student a homework-only folder and check it with him at the beginning and end of each class.



- Designate a bag or pack in which to keep materials that go to and from school.
- Develop a reminder system for important notes or tasks (Example, a note inserted in a colorful luggage tag attached to a back pack or purse).
- Give the student an extra set of textbooks for home.
- Incorporate repetition/ practice of new material.
- Include student buddies to assist with strategies.
- Provide photocopies of notes or overheads.

BEST COPY AVAILABLE



ATTENTION AND CONCENTRATION

Attention and concentration involve "holding objects, events, words or thoughts in consciousness" (Savage and Wolcott, 1994, p. 54.) Following injury, the brain is generally not as alert, less able to sustain focus, or to filter sensory information. The student's focus may be more internal than external.

Combined with the mental effort of using injured pathways and the now challenging task of shifting external focus from one thing to another, many students have problems with attention and concentration. Difficulty with attention may also indicate problems with organization, memory, or language abilities.

In addition to struggling to use an inefficient brain, the student is also often struggling with pain (headaches and injury to other parts of the body) and fatigue, which influence attention and concentration. Emotional responses to the injury or medication side effects may reduce attention and concentration abilities as well.

Regulating the environment, and modifying the content and pace of assignments, will be especially important in addressing challenges in this area.

Regulating the environment, and modifying the content and pace of assignments, will be especially important in addressing challenges in this area. In extreme cases, medication supervised by a physician specializing in brain injury may be effective.

- Help the student learn note taking techniques and how to highlight essential information .
- Regularly summarize information.
- Ask the student to paraphrase or repeat it back..
- Utilize activity log, tape recorder, electronic organizer, calculator, computer, alarm watch, simple activity log. recording significant events and information becomes the memory for a student with severe memory loss.
- Develop methods of organizing people, events or ideas; use study guides; make charts, graphs and diagrams; use mnemonics, verbalize visual spatial information; use gesture, role play, audio/visual cues, and describe attributes for retrieval. (Savage and Wolcott, 1994)
- Find ways to make material relevant to the student: match instructional method to learning style; give meaning to rote data; link new information to previously learned information; utilize techniques such as visual imagery, chunking into segments, association. (Savage and Wolcott, 1995)

BEST COPY AVAILABLE

Attention and Concentration Changes Teachers may observe

- Does not follow instructions
- Talks out of turn
- Does not comprehend a lesson
- Has difficulty focusing on one task
- Hands in incomplete assignments and homework
- Has difficulty shifting attention from an earlier event or topic, or from one activity to another
- Makes comments that are off topic or not related to the situation
- Has difficulty staying in one place, sitting still
- Takes poor notes
- Has difficulty with multiple step instructions
- Gives up on a task
- Has difficulty shifting between topics or activities
- Does not follow a class discussion, lecture or slide presentation

ATTENTION AND CONCENTRATION: STRATEGIES FOR INTERVENTION

- Seat nearest the location of instruction
- Avoid areas near doors, windows, and traffic patterns
- Organize the work area by reducing clutter of furniture, supplies, and décor
- Reduce background noise by experimenting with ear plugs, ear muffs/phones , or introducing background sound such as, white noise or a walkman with soft music.
- Use verbal and visual cues (pictures or symbols placed prominently or self-cue instructions or cards chosen with the student)
- Have a buddy, aide, or tutor assist the student with strategies
- Provide opportunities for the student to take breaks
- Use a written or picture schedule and check off progress
- Schedule most important work for the times of greatest concentration
- Connect new learning to prior knowledge
- Use clearly defined, meaningful objectives
- Increase interest with new, stimulating activities
- Break assignments into smaller and shorter segments
- Limit the amount of information on worksheets, notes, etc.
- Point out information for which the student needs to (who, what, how or where)
- Work or test in alternate settings where there are fewer distractions
- Emphasize the skill or concept over quantity of work
- Experiment with using timers and a motivating reward
- Gradually increase goals

REASONING, PROBLEM-SOLVING, AND JUDGMENT

Reasoning requires *"considering evidence and drawing conclusions, involving flexible exploration of possibilities (divergent thinking) and use of past experience. Problem solving occurs when a goal cannot be reached directly. Ideally it involves goal identification, consideration of relevant information, exploration or possible solutions, and selection of the best. Judgment is the decision to act based on consideration of relevant factors, including prediction of consequences."* (Savage and Wolcott, 1994, pp.55-56).

These complex processes contribute enormously to the student's success in life.

The frontal lobes are typically associated with changes in function of these skills. However, it is impossible to isolate problems to this area of the brain when a number of other capacities contribute to it, for example, comprehension and memory.

Reasoning, problem solving, and judgment affect the student behaviorally and so-

cially as well as academically. Safety may be a particular concern because when the above factors are not present, the student may place himself or others in potentially dangerous situations.

Reasoning, Problem-Solving and Judgment Changes Teachers may observe

- Does not ask for help
- Argues with adults or peers
- Is more dependent or withdrawn than previously
- Has difficulty identifying essential information or drawing conclusions, for example, solving word problems in math
- Makes unsafe choices of friends or activities
- Appears to comprehend material, but has difficulty answering open-ended questions, making generalizations, or formulating rules
- Does not understand figures of speech, metaphors Behavior or language not suitable to the situation Reacts adversely to changes in routine or unexpected problems
- H .s difficulty generalizing strategies to a new situation or setting
- Appears not to learn from experience
- Does well with true-false and multiple choice, but not essay, tests When faced with an unexpected situation may respond by becoming upset

REASONING, PROBLEM-SOLVING AND JUDGMENT: STRATEGIES FOR INTERVENTION

- Develop a step-by-step guide for problem solving by identifying the problem, considering relevant information, listing and evaluating possible solutions, and creating a plan of action
- When considering solutions, review at least two different alternatives then let the student select one of the solutions.
- Expect the student to participate in group discussion about real-life situations: explore pros and cons and alternatives, and try them out.
- Help the student identify cues (responses or actions of others) from the environment to use as a guide for behavior.
- Check on the need for assistance.
- Avoid language using puns, sarcasm, and double meanings.
- Discuss and model suitable and safe language and activities.
- Foster friendships with positive role models.
- Give consistent, neutral feedback.
- Discuss and plan for changes.
- Break tasks into smaller and shorter segments.
- Outline text and underline key points.

ORGANIZATIONAL SKILLS

Difficulty organizing behavior or thoughts is one of the most common results of a traumatic brain injury. The student's ability to organize his or her behavior and thinking is rarely assessed in a school-based evaluation.

Intelligence tests and other tests present the information to the student in an already-organized fashion, directing the student's attention to the materials in front of him and describing the response requested of the student. Real-life situations are rarely so organized and structured.

Students who have difficulty paying attention to the most important features of their environment, logically organizing and planning their behavior, and following through often have grave difficulty behaving reasonably in situations which do not provide intense external support and structure.

When a very young child experiences a brain injury, (under the age of three), the result typically is a severe disruption in the ability to organize incoming information

BEST COPY AVAILABLE

Organizational Skill Changes Teachers may observe

In Young Children birth – 4 years:

- Difficulty with transitions
- Outbursts or tantrums over a change in activity or during unstructured times
- Difficulty changing activities or dealing with unexpected changes in the routine
- Impulsive and/or aggressive behavior, particularly in new, complex or unpredictable settings

Inability to change thinking based on new information

and behave in a way which is planned and "sensible".

Older children and adolescents who suffer a traumatic brain injury also demonstrate deficits in organizational abilities; these difficulties show up in more subtle aspects of their behavior and in their academic achievement.

ORGANIZATIONAL SKILLS:

STRATEGIES FOR INTERVENTION

To help a student who does not have normal ability to organize information independently, parents and teachers must provide more structure for the student than is ordinarily necessary for a student of his age. Increasing structure can include any of the following:

For young students:

- State the obvious; it may not be as clear to the student as it is to you.
  Break down complex information or abstract phrases into small, concrete terms. For example, instead of telling the student, "Finish your work." direct him to the first problem, tell him the type of problem it is, and instruct him to work a practice problem or two before starting

Organizational Skill Changes Teachers may observe

In Older Children and Adolescents

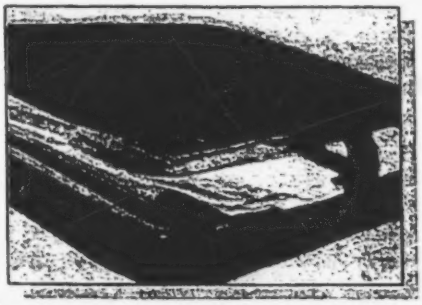
- Inability to do two things at once or pay attention to several things at once.
  Example: a student looks in a backpack to get something which you have asked them to find, and cannot remember what it was looking you wanted them to get
- Difficulty taking notes in class; notes may be illegible, undecipherable, or simply not very helpful.
- Written work appears sloppy, dashed-out, and poorly organized on the page.
- Difficulty following through with long-range assignments.
- Fails to hand in homework or other work that is due over a several-day or several-week period Fails to allow adequate time for long-range projects, such as a science fair project, a book report, or a term paper, but attempts to produce such a project in a very short period.
- Forgets information they have been told
- Difficulty listening to and learning from lectures in class.
- Apparent difficulty with "memory."
- "Spaces out" or daydreams in class.
- Does not follow or contribute to class discussions.
- Inability to focus on the material presented in class.
- Difficulty learning new information.
- Does not apply information learned to a new situation.

Poor social judgment, requiring more adult supervision..

BEST COPY AVAILABLE

on the actual assignment. Break down a large, complex task into small, concrete steps and give them to the child one by one, then link them together into two or three parts. Remember, phrases that are understood by most children may not be clear to the student with organizational deficits.

- Use a picture-form daily planner, to help the student understand the organization of the day. A daily planner makes the structure of the day obvious to the student. Although this structure is obvious to you, it may be a mystery to a student. Such an intervention makes apparent the sequence and flow to the events of each day as well as their logical order. It allows the student to prepare himself for the transitions involved to the next activity and eliminates surprises. A daily planner is also a useful way to give detailed information between school and home regarding how a child's day is going. Finally, it can serve as a source of data collection for problem solving when difficulties arise. Patterns in a student's behavior can be pinpointed more effectively with the use of such a planner.



A daily planner makes the structure of the day obvious to the student. It allows the student to prepare himself for the transitions involved in the next activity so that it does not take him by surprise.

- Establish a daily routine as much as possible. Particularly for young students, the ability to predict what is going to be happening will help them to organize their behavior better.
- Hold a small but clearly defined set of behavioral expectations for the child at different times of the day. For example, at breakfast, sit at the table and eat until through; then take your plate to the sink. Then you may be excused. OR, at story time, we all sit on the floor with our hands in our laps and listen.
- Practice and rehearse the student's options in each setting. Add structure to unstructured settings by telling the student what to look for or do.
- Talk with the child about changes in routine or the usual schedule. Let the child know what is expected him/her in the new setting. For example, "This afternoon we are going to your brother's soccer game. You and I will be sitting on on the blanket during the game. Let's pick out some books and games to bring with us so that you will have something fun to do."
- Prepare the young student in advance if there is a specific behavior you expect. Remember to focus on the positive: tell the student what to do rather than what not to do. For example, instead of yelling "Don't run!" to a child who is racing across a parking lot, talk to the student while you are unbuckling his seat belt: "We are at the parking lot now. We are going to walk side by side and hold hands."
- Help the student to keep instructions in mind by simplifying and rehearsing them. "We are going to walk, walk, walk side by side!" while you are marching with the child and holding hands.
- Remember that the student is likely to be more defiant, irritable, and resistant when confused. At such times, provide more structure and fewer choices.

For older students:

- Tell the student's parents what chapters or topics will be covered in the upcoming week. Encourage parents to read over the chapter, summarize it, or talk about related information at home during the weekend before. This will allow the student to become familiar with the

BEST COPY AVAILABLE

ideas he will be hearing about at school.

Teach the student to prepare written work using a series of drafts. Example: Begin by listing the three most important ideas; expand these into an outline with beginning, middle, and end; check the outline for a logical progression of ideas; turn the outline into sentences and paragraphs; proofread and edit; check for spelling and punctuation errors.

Share your expectations regarding homework and the schedule of assignments with the parents, so that the parent can put these on the student's calendar and keep providing the structure the student needs to meet these responsibilities successfully.

- Use a calendar to plan long-range projects with the student. For young students, a one-month calendar is plenty. For older children, a three-month calendar may be necessary for breaking down and listing the small steps involved in long-term projects. The due dates for each of the steps should be noted on the calendar as well. For example: book report on a famous American is due November 30th. Final draft ready November 25th. First draft October 20th. Outline of paper on famous American by October 15th. Read book on famous American and take notes: October 5th to 12th. Get book at library on famous American by October 1st.
- Identify a counselor, teacher, or paraprofessional at school who is aware of the schedule of required assignments and long-range projects .and who can work with the student on a regular basis so that assignments can completed and turned in on time.
- Provide the parents with a list of required assignments and projects for the semester.
- Share your expectations regarding homework and the schedule of assignments in different subjects with the parents, so that the parent can put these on the student's calendar and keep providing the structure the student needs to meet these responsibilities successfully.
- Students with organizational difficulties have a great deal of trouble listening to a lecture, moving their attention from teacher to the blackboard or a slide, and taking notes at the same time An outline of the material to be presented in class that day will allow the child to direct his/her attention to the material being presented by the teacher in class. The outline offers a good study guide for the child, because the material is already organized and the most important details are included in the outline.
- A note-taking buddy, a student who is a good note taker, should be assigned to the student. NCR paper is available in both loose-leaf and copybook form. The note-taking buddy can simply tear off the second sheet and give his notes to the student at the end of class. The notes can then be kept in a loose-leaf binder.
- Teach the student to highlight text and to make an outline of the im-

portant information from textbook material. Using a highlighter to identify key words, or topic sentences and main ideas, is very useful. Be aware that the child may not be able to do this on his own at first. You may need to go through information with the child and teach him/her what to highlight. Listing "wh" questions and asking the child to look for the answers to those questions when reading a paragraph can also be very helpful. "Wh" questions include: Who is this about?, What happens?, When did it happen?, Where did it happen?, Why did these things happen in this way?, and How does this event affect the world?

- Students with organizational difficulties often miss "the big picture." They have a great deal of difficulty understanding unstructured situations and may have problems at recess or lunch period in school where spontaneous, hard to predict, and action-oriented behavior is occurring. Preparing the student with a set of activities that he/she can do during these unstructured times to reduce the chance that he/she will engage in impulsive, aggressive, or unsafe behavior.
- Encourage use of a calendar at home and in class:
    - Teach your student how to use it.
    - Put upcoming activities and due dates on it.
    - Direct attention to it every afternoon to cross off today and prepare for tomorrow.
    - Check it every morning to review what he needs for the day.

Students with organizational difficulties often miss "the big picture."

For homework:

- Let the student dictate a first draft of story or long written assignment
- Have him correct first draft for punctuation, spelling, paragraphing, and elaboration.

In class:

- Check to make sure he has preferential seating for each activity. Our current open-class environment makes it necessary to change the student's seat throughout the day so that he has a clear view and is close to the speaker.
- Increase structure to increase organizational skill development.
- Teach him a strategies for organization and remind him to use these strategies.
- Tell him the rule he is working on, e.g.: "all these problems involve subtracting with borrowing; remember to line up your numbers and watch for place value"
- Provide a written outline or a few facts for the student to look for when he is reading, watching a movie, or listening to a presentation. For example: "While you're watching this movie, look for three different musical instruments and write them down."
- Simplify complex tasks—break them down, direct the student's attention to one aspect of the task first, then a second aspect, etc.,
  Example 1: "This page has a lot of different kinds of math problems on it. First, we are going to read through it and highlight all the plus signs with a yellow marker._Now, do all the problems that are addition problems; remember, sometimes addition involves carrying, so remember your carrying rule. Now look for division problems; highlight the

BEST COPY AVAILABLE

division sign with your blue highlighter, and figure them out.

Remember, you have to rewrite division problems and mark the place value for the quotient.

Example 2: "Correct this paragraph for punctuation errors. First, go through it and put capital letters where they are needed using the red pen. Remember, capital letters are needed at the beginning of each sentence, and for proper nouns.... Now, take a green pen and put a punctuation mark at the end of each sentence. Remember, it could be a period, comma, question mark or exclamation point."

- Follow the SPELL IT OUT rule to increase structure and organization for the child.
- Teach the older student to prepare written work using a series of drafts, beginning with a listing of main ideas, and then elaborating on each in outline form.
- Provide alternative tests of learning that do not rely exclusively on free recall and verbal generation (multiple choice, visual projects, matching tests).
- Identify an individual at school who can meet with the student on a regular basis and who is aware of the schedule of required assignments and long-range projects. Communicate this schedule to the student's parents.

SPELL IT OUT

Simplify the task
Parts- break it down
Enlarge it
Layout- does the page allow room for working the problem?
Link skills that are already mastered
Identify the relevant concepts
Teach a strategy
One skill at a time
Underline and highlight
Tell the student what to look for

EMOTIONS, SOCIAL SKILLS AND BEHAVIOR

Changes in emotions, social skills and behavior are common following brain injury. These changes may be organic, or they may be an emotional response to the changes brought about by the injury, or both. Behavior changes occur across environments, and can be triggered by minor events. Impulse control is frequently reduced by injury to the brain. Added to this may be frustration over failing at tasks that once were automatic, or dealing with an environment that is overwhelming (for example, too stimulating or fast paced). Depression may be due to chemical changes in the brain resulting from injury or a side effect to medication. Or it may be a reaction to the many losses that accompany brain injury (friends, activities, academic abilities, career goals, etc.)

Changes in cognition contribute to changes in emotional regulation, behavior, and social skills. Injury to the brain may substantially alter ability to assess a problem and find a solution. The inability to think in a flexible manner often makes a student argumentative or unmotivated. If the student is unaware of changes in his ability, or does not pick up on cues from others, these will be important factors in the teacher's choice of strategies.

Whether the student is in school, at home, transitioning to employment, or out in the community, emotional control and social skills will determine success in life. They profoundly affect not only the injured person, but also all people around him. Particular priority must be given to compensatory strategies to address these changes.

Interventions (behavior management) that work with students with attentional, learning, emotional and behavioral disabilities will not work effectively for students with acquired brain injury. The areas of the brain that allow the student to use feedback, consequences, and experience to alter future behavior may have been injured. If this is so, the approach is to alter the environment

BEST COPY AVAILABLE

Emotions, Social Skills and Behavior Changes teachers may observe

- Immaturity
- Perform poor in complex, unpredictable, or stressful situations (playground, PE, etc.)
- Misbehavior
- Rapid mood changes
- Emotional expression out of proportion to the situation (response to a change in activity, etc.)
- Impulsive laughing, crying or anger
- Interruptions
- Easy agitation,, upset, or loss of control
- Demanding, seeks attention
- Inability to grasp concept of behavior norms
- Limited insight into own abilities and behaviors, denies problems
- Inability to correct behavior after feedback
- Inappropriate social or sexual comments or actions
- Argumentative
- Says or does the first thing that comes to mind
- Inability to pick up on social cues
- Unpleasant eating habits
- Takes dangerous risks
- Fearfulness
- Avoidance or refusal to participate in discussion or activity
- Withdrawal from activities or other interaction
- Flat, passive, or unmotivated affect
- Disregard for clothing or hygiene
- Appearance of depression or anxiety
- Repeatedly does or says one thing
- Has few or no friends
- Has difficulty seeing other points of view
- Misinterpretation of actions or intent of others
- Discusses suicide

so that the student learns control and positive behavior through errorless lear ning.

EMOTIONS, SOCIAL SKILLS AND BEHAVIOR: STRATEGIES FOR INTERVENTION

For younger students

- Give clear and simple directions
- Avoid time outs (the student is not likely to independently regroup or calm down)
- Label the emotion and direct the student to show the acceptable behavior

For older students

- Teach strategies and how to use them rather than offering assistance
- Discuss and practice age-appropriate behaviors in real life situations
- Create structured social activities (a school/community friendship group focused on the student, for example)
- Assume limited ability to generalize from one setting to another

Generally:

- Identify the origin of the difficulty to the student
- Assess the age of the exhibited behavior and select strategies suitable
- Build on existing strengths
- Build in peer feedback and modeling (the student may be more receptive)
- Minimize verbalizations and logical explanations
- Maximize hands-on demonstration
- Create organized desk, cubby and locker areas
- Reduce environmental and situational triggers (changes in routine, structure, noise, clutter, activity, fatigue, stress, frequent transitions, etc.)
- Create predictable and consistent routines
- Gradually reduce structure to determine "comfort zone"
- Prepare the student for transitions or changes in routine
- Be flexible about expectations
- Build on sharing in one-on-one, small group, and full class setting

BEST COPY AVAILABLE

- Focus on success- what the student can do rather than what she/he cannot do (Emphasize strengths and needs rather than disabilities and deficits)
- Teach from the student's strongest learning modality
- Incorporate breaks from the setting to regroup, calm, rest
- Suggest and model alternate words and actions
- Use a buddy, especially during unstructured activities like recess, cafeteria, etc.
- Build awareness of how words and behaviors affect others
- Educate and involve all adults and peers
- Give the student a choice between one of two things rather than many
- Help the student identify what is wrong and possible solutions
- Offer positive ways to express feelings (discussion is not always productive or possible)
- Change the activity or subject to something positive
- Reward positive behavior
- Discuss and practice what is expected prior to events
- Teach skills to master new routines and activities
- Contact community recreation programs for adaptive, integrated recreation for youth with disabilities
- Find or start a support group for youth with brain injuries
- Seek medical/psychological consultation regarding depression/suicide
- Designate a case manager or counselor with whom the student to talk with (a diary may help the student focus on challenges and successes)
- Develop a team of parents, teachers and support staff (have a game plan and meet weekly)

FATIGUE

Fatigue following brain injury occurs in several ways. The primary source of fatigue is the direct result of disrupted pathways in the brain described in Chapter 2. Once axons in the brain are broken or stretched, immense effort is required to complete even simple functions. Sensory and motor changes, for which the student is constantly compensating, are common. Thinking, movement, and speech may take longer, and be less accurate. The brain tires much more quickly, and is less able to process the stimulation of what is heard, seen and felt.

There are other components of fatigue as well. Headaches, often persistent and severe, are also common with brain injury. Endurance in physical activity may be seriously reduced. Sleep patterns are often disrupted by changes in brain chemistry. Frequently there is pain associated with injury to other areas of the body. There may be side effects to current medications or newly introduced medications of which school staff may not be aware. All of these can contribute to greatly increased levels of fatigue that may improve, but can persist indefinitely.

Adequate rest, regular breaks, and modifying the workload are especially important in addressing fatigue. The student may have difficulty self-monitoring her/his level of fatigue before it has become severe. Ignoring or inadequately treating fatigue may lead to a downward spiral for the student.

Fatigue/Endurance Changes A Teacher May Observe

- Appearance of daydreaming
- Slow performance of tasks
- Reports of headaches or other pains
- Poorer memory than usual
- Unusually emotional
- Symptoms of fatigue (yawns, dozes, etc.) or illness (pale, listless, etc.)
- Disruptive or misbehavior

FATIGUE: STRATEGIES FOR INTERVENTION

- Keep track of observed symptoms of fatigue.
- Discuss these with the student and parents.
- Incorporate brief breaks throughout the day to rest/quiet the brain.
- Shorten the length of the school day.

- Offer headphones, earmuffs, or earplugs (they may be more likely to be used if available to all students).
- Reduce stimulation in the environment (sound, movement, number of objects, bright light).
- Incorporate quiet activity and slowed pace in the curriculum.
- Adjust the schedule and assignments to fit the most productive time of the day.
- Assess sleep patterns, evening and weekend activities and responsibilities with the student and her/his parents.
- Assure that the student is eating protein-rich meals and snacks (it has been found that protein with each meal is valuable in preventing swings in energy)

SUMMARY POINTS:
Changes in Learning and Compensatory Strategies

- The medical classification of the severity of the brain injury is not a complete indicator of the changes that may occur.
- Self-awareness of changes, perception of the need for strategies, and ability to use them (especially independently) varies from student to student.
- Because improvement following brain injury occurs at an individual rate and over many years, incorporation of strategies must be on going.
- Introduce strategies gradually, and allow considerable time to assess their effectiveness.

BEST COPY AVAILABLE

CHAPTER VI

Task Analysis

This Chapter allows the reader to:

- **Gain an understanding of task analysis and how to do it**
- **Learn about the SPELL IT OUT rule and how it can assist students with a brain injury**
- **Become familiar with the Classroom Observation Guide and identify the behaviors/actions that may indicate the need for strategy intervention**

Task analysis is a way to break down and examine the individual components of an activity. The purpose of conducting a task analysis when working with a student with a brain injury is to determine where in the process of beginning, maintaining, or completing an activity the breakdown occurs, and the weak links in the learning chain.

When attempting to understand why a student is not learning like the other students, or is having trouble, the teacher needs to become a detective. What is causing the student to struggle? On the surface the student:

- Gets failing grades on papers and tests
- Angrily refuses to work, throwing her materials on the floor,
- "Spaces out" in class,
- Does not turn in her work,
- Does not pay attention.

When working with students who have had a brain injury it is important to understand how to analyze the tasks students will be asked to perform. Students with brain injuries often appear to have characteristics similar to those students who have been identified as having learning disabilities, attention deficit disorder and/or emotional disabilities and may be misdiagnosed because of that.

Because of the potential for being misdiagnosed, it is crucial that teachers become skilled at "playing detective", and try to understand where the student's ability to complete an activity is breaking down and identify steps that will help the student be more successful. Interventions that are effective for students with learning disabilities or A.D.H.D., or emotional disabilities are unlikely to be effective with students who have had a brain injury. The first general questions to ask when beginning to analyze a task are:

- What equipment/materials are needed to complete this activity?
- How much time is needed to complete the activity?
- What technical skills/knowledge are needed for this activity?

Once these three basic questions have been answered the specific demands of a particular activity can be assessed. Task or activity analysis is the process of analyzing and breaking down the task into its smallest performance components. When breaking down an activity, look at the primary skill areas needed and the individual abilities associated with each skill.

Following is an outline of areas that need to be addressed when trying to determine where the student is having difficulties:

MOTOR/SENSORY ABILITIES

What must the student do to perform this activity? How does the student receive and respond to sensory information from the environment?

- What position does the student need to be in?

- What range of motion abilities are needed?
- How much muscle/physical strength is needed?
- What degree of coordination is necessary?
- What type of grasping skills are needed?
- What movement patterns are required?
- What tactile skills are needed?
- How does hearing ability/sensitivity contribute to the activity?
- How does sense of smell contribute to the activity?
- What visual-perceptual abilities are necessary?
- Does this activity require the student to cross the midline?
- Can the student maintain balance while doing this activity?

Because of the potential for being misidentified, it is crucial that teachers become skilled at "playing detective" and trying to understand where the student's ability to complete an activity is breaking down.

COGNITIVE

What information must be intellectually processed by the brain?

- How much attention is required?
- What degree of decision-making is required?
- What problem-solving abilities are necessary?
- What are the memory requirements?
- What organizational skills are needed?
- Are abstract concepts a part of this activity?
- Does this activity require new or previously learned information?

PSYCHOLOGICAL

How does this activity affect the student's feelings about self?

- How much structure does this activity provide?
- Is this activity a low key (passive) or high energy (active) activity?
- Is the student required to be neat and tidy or is it alright to be messy when performing the activity?
- Does the student resist doing this activity or freely engage in it?
- Does this activity appear to come naturally to this student or does it require a lot of energy and effort?
- Does this activity provide opportunities for self-esteem building, or does the student feel embarrassed and uncomfortable about her skill level?

SOCIAL/EMOTIONAL/ BEHAVIORAL

How does this activity affect or become affected by the student's peers? Teachers?

- Is this an individual or group activity?
- Does the activity require cooperation between others?
- Is this a competitive activity?
- Does activity occur in a low energy vs. high energy environment?
- How much emotional flexibility is needed for this activity?
- What degree of adaptability/spontaneity is required with this activity?

After asking these questions and observing the student several times the areas giving the student the most difficulty will have been identified. Once the area of difficulty has been isolated use the **SPELL IT OUT** rule (see page 48, chapter 5) to create more structure and organization for the student.

In addition to the **SPELL IT OUT** rule, think of all possible ways to break the tasks down into more manageable steps.

Many times, teachers are fearful that if the student is already behind peers, breaking down the tasks will only slow things down more. They continue to give the student the whole assignment, because they are focused on

what the student is expected to learn at a particular grade level.

Unfortunately, the student with a brain injury will be less able to learn the more complex material when presented in this manner.

- Breaking assignments down
- teaching the individual steps and strategies
- reminding the student to use the strategies that the student will be successful.

When this approach is used, the student will gradually begin to link the steps together independently and the teacher can gradually reduce the supports needed by the student.

It is important to keep in mind that the student's needs and abilities continuously change To be most effective as a teacher, it is important to continually re-evaluate the student's progress. Task analysis will prove a useful tool if you r goal is to re-educate the student following a brain injury.

In order to be most effective as a teacher, it will be important to continually re-evaluate the student's progress.

Classroom observation can be used in conjunction with Task Analysis to identify which problems are contributing to learning difficulties. The student's areas of academic difficulty are broken down into smaller components to aid in determining what steps/components of the activity are too difficult for the student to perform successfully and which can be improved. Intervention strategies can be found in this chapter.

The **Classroom Observation Guide** that can be found in the Appendix is intended to assist the teacher in the process of task analysis. Put a check mark in the column that best describes the student's behavior. Look for patterns, or for categories that have several check marks. These areas are ones you will want to read about in more detail in Chapter 5.

SUMMARY POINTS:

Task Analysis

- Task analysis allows consideration of the sensory/motor, cognitive, psychological and social/emotional/behavioral components of a given activity.
- The SPELL IT OUT rule provides teachers with the opportunity to create more structure and organization for the student, which can lead to greater levels of success.
- The Classroom Observation Guide is a tool to assist teachers in determining which areas are prime targets for intervention strategies.

BEST COPY AVAILABLE

CHAPTER VII

Brain Injury Resources for Teachers

This chapter provides a:

- **Framework for establishing a team within individual school districts or schools**

Regular and special education teachers have stated that it is very difficult to understand and develop strategies for students with acquired brain injury. Each student is unique, the issues they present vary, and the way they respond to strategies differs. Many factors come into play, including pre-injury personality, level of ability to recognize their disability, and varying levels of behavior regulation. Because of this, working with students with acquired brain injury is a great challenge. For strategy development to be successful for individuals with brain injuries, teachers will need to be flexible and open to trial and error. Unfortunately there are no cookie-cutter strategies.

ESTABLISHING BRAIN INJURY TEAMS

PURPOSE AND STRUCTURE OF TEAMS

Some schools and/or school districts provide a multidisciplinary team that can provide consultation to teachers and assist them in identifying strategies to address the challenges of students with brain injuries. Because children with brain injuries often do not respond to interventions commonly used for children with learning difficulties, A.D.H.D., or emotional disabilities a multidisciplinary team that is more knowledgeable about effective learning strategies for children with brain injuries can greatly enhance the learning potential for these students.

Beyond administrative support and committed team members, the structure and function of the team needs to fit the structure and function of the district. Each district in the state of Colorado has it's own unique ways of operation.

When designing and implementing a multidisciplinary team dealing with students with a brain injury, it will be critical that the structure and design of that team fit the current structure of its district.

Several factors must be in place if brain injury teams are to be successful:

- Administrative support
- Committed team members
- A plan for personnel training and on-going education
- A structure that best suits the district it is serving.

Administrative investment is critical, and must provide budgetary supports, a commitment to on-going training, and assurance that the team will remain intact. The best-case scenario includes budgetary support to provide release-time for team members to provide direct consultation to teachers.

With the limited time teachers and school personnel have, the greatest challenge in establishing an effective team is to find people who have the interest and commitment to serve on a district wide brain injury team. Often the teams are made up of people who are involved because they have a personal connection to brain injury, either through a family member, friend or student. The individuals who stay committed have a passion for learning about and supporting students with acquired brain injury.

PURPOSE OF BRAIN INJURY TEAMS

- Attend state, regional, and national trainings about brain injury to learn and bring

BEST COPY AVAILABLE

back information regarding best practices in education

- Provide annual in-service training about brain injury for district staff (especially for members of the district's pre-referral teams)
- Serve as liaisons/consultants for students, parents, teachers, and community professionals as students returns to school
- Serve as consultants at IEP and other school planning meetings for students with brain injuries
- Be available for on-site consultation in the classroom and other school environments
- Serve as liaisons/ consultants in transition processes (i.e.: from grade to grade, school to school and to post secondary settings)
- Establish and maintain a resource library for the district

Several factors must be in place if brain injury teams are to be successful: administrative support; committed team members; a plan for personnel training and on-going education; and a structure that best suits the district it is serving.

STRATEGIES FOR GAINING ADMINISTRATIVE SUPPORT

- Document the need for a brain injury team
- Be clear about the function and purpose of the team
- Collaborate with other teams across the state
- Speak with administrative officials who have already committed to teams in their districts
- Provide administration with information on the complexity of working with students with brain injury and the need for a team of experts within the district

CHARACTERISTICS OF POTENTIAL TEAM MEMBERS

- A passion for learning/meeting the needs of students with disabilities
- Flexible attitudes as well as schedules
- Individuals from different disciplines i.e. occupational therapy, psychology, speech therapy, school nurses, special educators, regular educators, coaches, and physical education teachers
- Representatives from all the grade levels i.e.. elementary, junior high/middle school and high school

POSSIBLE STRUCTURE OF TEAMS

District wide/core team

Teams established using this model serve the district, and may be available to go to the individual schools within the district to provide consultation and on-going support. Their role is to:

- Provide consultation, supervision, and in-service training for site based team members
- Attend on-going state, regional and national trainings regarding best practices for serving students with brain injuries
- Establish and maintain a brain injury resource library for the district
- Actively pursue funding by way of grants, community resources, etc. for training and release time for team members
- Educate pre-referral teams about brain injury

Site based teams

Teams established using this model serve individual schools within the districts and consists of members from the specific school. Their role is to:

- Provide in-class observation and consult with school personnel regarding specific strategies for addressing student needs
- Educate school personnel and families regarding student specific learning profiles
- Educate school personnel about acquired brain injury and its effects on learning/behavior
- Attend IEP, 504, and other staffing meetings provide input/suggestions for accommodations, support strategies etc.
- Encourage school staff, students and families to access the resource library

Whether you are a teacher who has ready access to a well-functioning brain injury team, or if you are "on your own" in a district with little apparent support in this area, there are sources of information and consultation available to you. In the Appendix is a list of suggested readings and some Colorado and national resources.

SUMMARY POINTS:
Brain Injury Teams

- The key elements for successful BI teams: administrative support, committed team members, and a structure that matches the needs of the district.
- Teams are as unique as the personalities of their districts.
- Because serving students with acquired brain injuries is so unique, team experts can greatly assist teachers and other school personnel.
- There are many written resources and people resources available to teachers and school staff in the state – you are not alone!

CHAPTER VIII

Special Education Component

This chapter provides:

- **An overview of the special education process**
- **A brief discussion on areas of difficulty students with a TBI might experience**
- **Identification of components of an effective educational program**
- **Suggestions on what schools can do to adequately provide for students who have had a brain injury**

The Individuals With Disability Education Act (IDEA) identifies Traumatic Brain Injury (TBI) as a category eligible for receiving special education services. There has been discussion over whether Traumatic Brain Injury should be a sub-category Acquired Brain Injury (ABI). At this point the rules and regulations for IDEA separate TBI from ABI by providing the diagnosis of TBI as qualifying for special education services under the category of Physical Disability. IDEA provides for students who have incurred a non traumatic brain injury to be eligible for services through the 'Other Physical Disability' category if they meet the qualifying criteria.

As soon as school personnel become aware that a student has sustained a brain injury, traumatic or acquired, mild or severe, recent or old, the student needs to be evaluated for any possible negative impact on their ability to learn as well as any health related needs at school. This usually means that someone will need to initiate a referral for evaluation. The process for referral, assessment, and identification of interventions will depend on the school's policies. (Refer to the CDE Special Education Manual for specifics on this process)

If the brain injury is not enough that special education services are required, it may be more appropriate for the student to have a 504 Accommodation Plan developed by the school team. Regardless of the extent of the head injury, every student who has sustained a head injury needs to be evaluated to determine the impact this injury has on the ability to access the regular education program and to learn.

Because traumatic brain injury is a category of disability under the Rules and Regulations for the Individuals with Disabilities Act (IDEA), children and youth who have sustained a traumatic brain injury may be eligible for special education services during the school day. Traumatic brain injury is defined in these Rules and Regulations:

> *Traumatic brain injury means an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or to brain injuries induced by birth trauma.*
>
> *Federal Register/Vol. 64, No. 48, March 12, 1999, Rules and Regulations 300.7(b)(2)(12)*

Traumatic brain injury often results in diverse impairments that may be either temporary or permanent, and ranging from partial

to total disability. Pre-existing maladaptive behaviors or disabilities may be intensified and/or there may be a host of new problems arising in cognitive, communicative, affective and/or physical functioning. Below is a brief description of the types of difficulties a student may encounter in various functional areas following a brain injury. Below is a brief description of the types of difficulties a student may encounter in the various functional areas following a brain injury.

Cognitive

Students may have trouble initiating, organizing, and completing tasks, adjusting to change, using appropriate judgment, remembering for a short or long time, maintaining attention and energy for learning, and/or thinking and reasoning.

Communicative

Students may exhibit difficulties with initiating and sustaining communication, discriminating relevant from irrelevant information, processing verbal information, articulating and voicing sounds, sequencing and formulating ideas, and/or understanding and processing written and spoken language.

Social-Emotional

Students may have difficulty perceiving, evaluating, and using social cues and context appropriately, sustaining appropriate and satisfying peer and family relationships, demonstrating age appropriate social/sexual behavior, maintaining emotional stability, accepting and coping with the results of their injury, maintaining self-esteem, using self-control, restraining impulsivity, acting independently, and being motivated.

Physical

Students may sustain damage to their neurological system leading to seizures. Shunts may be necessary. There may be visual motor perceptual defects that affect spatial orientation. Gross motor skills may be altered causing difficulty with balance, strength, equilibrium, mobility, and endurance. Fine motor skills may also be impaired resulting in difficulties with tasks involving their hands. Oral-motor skills may become impaired leading to difficulties in eating and /or speaking. Additionally, problems can occur in the gastrointestinal system that might require feeding tubes; or with the bowel or urinary systems requiring specialized interventions

COMPONENTS OF EFFECTIVE PROGRAMMING

Success in school for students who have sustained a traumatic brain injury may require modifications in the environment, curriculum, instruction and/or schedule. The area(s) for emphasis will vary from student to student since the effects of traumatic brain injury vary.

Success in school for students who have sustained a traumatic brain injury will probably require modification(s) in the environment, curriculum, instruction, and/or schedule. The following four areas are critical in planning for the successful return of students into the school environment after a traumatic head injury. The area(s) for emphasis or most intensive planning will vary from student to student since the effects of traumatic brain injury are so varied from student to student.

TRANSITION PLANNING

There needs to be consideration and planning made for all transitions that occur for the brain injured student. These transitions occur when the student: returns home after the injury; returns to school; room to room or teacher to teacher; grade to grade; building to building; and upon graduation or leaving the school environment. However, several key factors need to be kept in mind as school personnel plan for transitions.

- Multidisciplinary decision-making
- Parent involvement
- Frequent reviews

BEST COPY AVAILABLE

- Planning for every transition
- Involving personnel from all involved agencies
  Identification of a case manager

(Transitioning is discussed in detail in chapter 4 and the Special Education Services Transition Manual discusses specifics on how this is to be planned for and implemented.)

ENVIRONMENTAL MANAGEMENT

The goal of environmental management is to provide support so that success is facilitated until the student has learned or relearned self-management skills. Continuous planning is support as the needs change. (This is discussed in detail in the first section of the manual.)

EXPANDED CURRICULUM AND EFFECTIVE INSTRUCTION

A student's curriculum and education should focus around three strands.

Differentiated Academic

Students must continue to develop intact skills and to relearn skills that were lost or impaired. Because students perform different academic skills with different levels of proficiency, they will need ~~curricula~~ that address these varying levels of proficiency. It is important to carefully assess the present level of functioning in all areas and determine appropriate interventions and strategies based upon this information. (This is discussed in detail in the first section of the manual)

Life Skills

Students who need assistance in learning or relearning how to compensate for essential pragmatic and employability skills will need this type of curriculum and instruction. These skills are needed in order to function at home, in school, in leisure activities, in the community and at work.

When determining the needs and strategies, it is important that adult services, including vocational rehabilitation services, be included in the planning process. (Please refer to the Special Education Services Transition

Developmental/Compensatory

When students need to develop compensatory strategies for skills that have been lost or impaired, they will need intense instruction in this area. (This is discussed in detail in the first section of the manual)

PHYSICAL CARE PLANNING, MANAGEMENT, AND SUPPORT

This planning becomes critical when a student requires monitoring or direct or indirect care for immediate and/or long-term medical and physical needs. The development of this component will require the assistance of the school nurse and the development of an Individualized Health Care Plan that will become a part of the student's IEP and assure that the child will be able to attend school in the least restrictive environment. The delegatory clause of the Colorado Nurse Practice Act (12-38-101 C.R.S.) states that unlicensed persons may provide nursing services only if the school nurse has instructed them on the procedure(s) and has officially delegated the task(s) to them. Parents are not authorized to ~~can~~ teach unlicensed persons how to provide for these specific health care needs. The school nurse must collaborate with the parent and health care provider to ensure that the needs of the student are met appropriately and safely during the school day.

IMPLICATIONS FOR SCHOOLS

Traumatic brain injuries are not a common occurrence and school districts may not have an adequate process in place for identification of these students and their educational needs and/or provision of needed services. As more students with mild to moderate TBI are identified, school districts must adapt and change to meet the needs of these students.

DISTRICT LEVEL

Each administrative unit should review their district plans and procedures to ensure that there are mechanisms in place to meet the needs of students with traumatic brain injuries, including those students covered by spe

BEST COPY AVAILABLE

cial education laws and those covered by Section 504 of the Rehabilitation Act.

Strategies a district should consider when assessing the adequacy of their programs to address the needs of students who have sustained a traumatic brain injury are:

- Develop district policies and procedures for responding to the various categories of needs that may follow a traumatic brain injury.
- Identify district staff with expertise from educational, health, and support services who can serve as resources to the student, family, and teachers.
- Be prepared to provide assistance for crisis and long-term situations.
- Provide awareness training for all teachers and administrators about brain injuries and the impact on educational process
- Determine which buildings are physically accessible for individuals in wheelchairs or limited ability to ambulate

BUILDING LEVEL

- Assigning a case manager as soon as possible after the injury occurs prior to returning to school is best.
- Develop collaborative relationships with the parents, student, all agencies, and health care providers involved
- Utilizing a multidisciplinary team, assess the student's current level of functioning and environmental constraints, and identify the needs of the student.
- Make the necessary adjustments to schedule and environment to accommodate the needs of the student
- Determine what the student needs to meet district graduation requirements if in high school.
- Provide specific training for staff and teachers regarding the student's specific needs.

THE SPECIAL EDUCATION PROCESS

The process for identification of traumatic brain injury as a disability is the same process that is used whenever it is thought that a student might need special education services. The process begins with a referral from a parent, guardian, teacher, ~~or~~ student, or other individual. The referring party does not need to provide a medical diagnosis of traumatic brain injury, but only needs to provide information that the student has sustained a head injury. This might be due to hitting a windshield in a car accident, getting hit in the head from an external force, or sustaining repeated injuries over a period of time during participation in sports and/or recreational activities such as football or cycling.

The related services staff and teachers will conduct appropriate assessments to determine if the student is in need of special education services. If the student does not need special education services, the assessment team must determine the appropriateness of referring the student for the development of a 504 Plan.

Students who have sustained a brain injury will often only need accommodations and not special education services. The 504 Plan is a formal process for providing the student with accommodations for accessing the regular education curriculum (Please see your district's 504 planning process for specifics on implementing this type of plan.)

The process of developing a 504 Plan is a function of the regular education staff with consultation from appropriate related service personnel.

The Guidelines for Serving Students with Traumatic Brain Injury on page 59 provides a process to help determine whether a student with a traumatic brain injury needs; an IEP, a 504 Plan, or no special accommodations. The Determination of Disability form on page 60 is from the Colorado Department of Education's Special Education Handbook. This form identifies the criteria used to determine if a student can be identified as a student with a physical disability. (Please refer to the CDE Manual for a detailed explanation of determining disability)

For students aged 14 years and over, a Transition Plan will also be needed if the student has an IEP. A Transition Plan identifies those services needed to prepare students to enter the community after high school. (Please refer to the CDE Special Education Guidelines Manual for details for the development of transition plans.)

THE 504 PROCESS

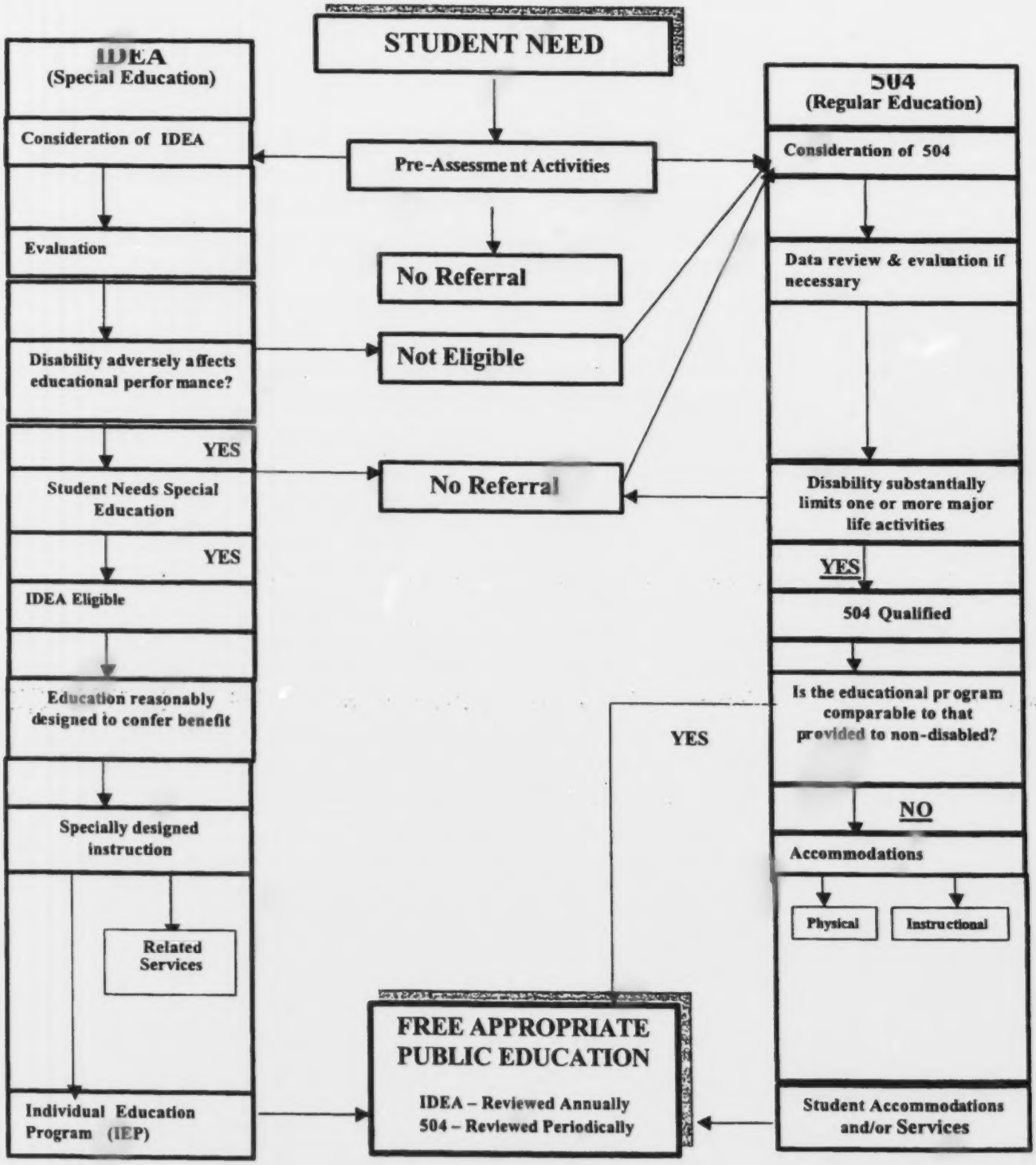
Section 504 is the part of the Rehabilitation Act of 1973 that guarantees specific rights in federally funded programs and activities to people who qualify as disabled. Section 504 states: "No otherwise qualified individual with a disability in the United States... shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance..."

A student who does not need special education services but may need accommodations in order to access their regular education curriculum may be eligible for a 504 Plan. School districts of 15 or more employees are required by federal legislation to have a 504 coordinator. And the responsibility for developing and implementing a 504 Plan belongs to regular education with support form special education if needed.

A student with a 504 Plan may continue to need academic and/or workplace accommodations after high school. Even though a Transition Plan is not required for students with a 504 Plan, the success of the student with a TBI after high school can be enhanced if school personnel take time to work with the student and the family regarding appropriate accommodations the student will need after leaving high school.

Early identification with ensuing assessment, identification of needs, and appropriate interventions and transition planning are major factors in facilitating the successful integration into school and the community and insuring the academic success of students who have sustained a traumatic brain injury. It is hoped that this manual will be used to assist school staff in planning for the needs of students who have had a traumatic brain injury.

GUIDELINES FOR SERVING STUDENTS WITH TRAUMATIC BRAIN INJURY



Legal Name of Child/Student	Child/Student ID	Date of Birth	Date of Meeting

Determination of Disability

DEFINITION: A child with a **physical disability** shall have a *sustained illness or disabling physical condition* which prevents the child from receiving reasonable educational benefit from general education.

Criteria for a physical disability preventing the child from receiving reasonable educational benefit from general education should be dependent upon the child's diagnosis and degree of involvement in the regular school setting as characterized by any of the following:

The child's chronic health problem or sustained illness requires: *(check those* that apply)

? Continual monitoring,

? Intervention, and/or

? Specialized programming

in order to accommodate the effects of the illness so as to reasonably benefit from the educational program.

The child's physical disability interferes with: *(check those* that apply)

? Ambulation attention,

? Hand movements,

? Coordination,

? Communication,

? Self-help skills, and

? Other activities of daily living

to such a degree that it requires: *(check those* that apply)x

? Special services,

? Equipment, and/or

? Transportation.

A sustained illness means a prolonged, abnormal condition requiring continued monitoring characterized by limited strength, vitality, or alertness due to chronic or acute health problems and a disabling condition means a severe physical impairment. Conditions such as, but not limited to, traumatic brain injury, autism, attention deficit disorder and cerebral palsy may qualify as a physical disability, if they prevent a child from receiving reasonable educational benefit from general education.

? or is eligible by variance from standard criteria according to the following rationale:

REQUIRED FOR DETERMINATION OF A PHYSICAL DISABILITY.

BIBLIOGRAPHY OF SUGGESTED READINGS

ACQUIRED BRAIN INJURY (BASIC INFORMATION)

- Elvin: The Elephant Who Forgets. (specifically for pre-school or elementary age students), Snyder, 1998.*
- Brain Injury: Causes and Consequences for Students. Sohlberg, Todis, Glang, Lash, 1999*
- The Child's Brain: Injury and Development. Savage, 1999*
- Bing Bang Bong; When your Child has a Concussion. Savage, 1998*
- Children With Traumatic Brain Injury: A Parent's Guide (The Special Needs Collection), L. Schoenbrodt (editor), EdD, CCC-SLP, May 2001.

SOCIAL, BEHAVIORAL

- Building Friendships: When Students Have Special Needs. Voss, Cooley, Glang, Todis & Lash, 1999*
- An Educators Manual: What Educators Need to Know About Students with Brain Injury. Edited by Savage & Wolcott, 1995*
- Helping the Child who Doesn't Fit In. S. Nowicki, & M. Duke, 1992.
- Defiant Children. R. Barkley, 1997

TRANSITION

- When Your Teenager is Injured: Preparing for Work and Adulthood. Lash, Kahn, Wolcott, 1997*
- Going to College: When a Student Has a brain injury. Goodwin, Larson, 1999.*

IEP/504

- Special Education IEP Checklist: For a Student with a brain injury. DePompei, Blosser, Savage & Lash, 1998.*
- Teaching Strategies. Tyler, Blosser & DePompei, 1999.*
- Making the IEP Process Work for Students with Brain Injury. Glang, Sohlberg & Todis, 1999.*
- Negotiating the Special Education Maze. Anderson, Chitwood & Hayden, 1990.

GENERAL INFORMATION FOR TEACHERS

- Signs and Strategies for Educating Students with Brain Injury: A Practical Guide for Teachers and Schools. Wolcott, Lash, Pearson, 1995.*
- An Educator's Manual: What Educator's Need to Know About Students with Brain Injury. Edited by Savage & Wolcott, 1995.*
- Educational Dimensions of Acquired Brain Injury. Edited by Savage & Wolcott, 1994.
- Learning to Learn. Olivier & Bowler, 1996.
- All Kinds of Minds. Levine, 1993.

*These readings are available through Lash & Associates (L&A) Publishing/Training, 708 Young Forest Drive, Wake Forest, NC 27587. Phone and Fax: (919)562-0015. Email: lapublishing@earthlink.net, http://www.lapublishing.com

The following web sites are also a good resource for finding books related to brain injury for parents, educators, and children.
www.amazon.com
www.barnesandnoble.com

STATEWIDE & NATIONAL RESOURCES

- **Brain Injury Association of Colorado**: 1-800-355-2443 or 303-355-9969 www.biacolorado.org (For a list of support groups and other statewide resources contact the Brain Injury Association of Colorado)

- **BRAINSTARS Helpline**: 1-800-458-6500 x6642 or 303-861-6642 – This program has a manual that provides strategies for teachers and for re-education of students with brain injuries.

- **Center for Community Participation**: 970-491-6930 www.colostate.edu/depts/ccp This organization is located at Colorado State University in Fort Collins, Colorado.

- **Colorado Department of Education, Special Education Services Unit** 303-692-2357 www.cde.state.co.us There is a 'Section 504 Information' site and the Special Education Services site.

- **Center for Disease Control:** www.cdc.gov Information on brain injury and related statistics

- **National Brain Injury Association:** www.biausa.org Information for parents, educators, and students regarding brain injury, legislation, statistics, and interventions. There is also a publication entitled Pediatric Brain Injury Source, Summer 1999 that is a good reference.

REFERENCES:

Savage, R., Wolcott, G., Educational Dimensions of Acquired Brain Injury, PRO-ED., Inc. (1994) pp. 3-4, p.16, "Figure 2.2 Neuron", pp. 54-56.

Savage, R., Wolcott, G., An Educators Manual: What Educators Need to Know About Students with Brain Injury, Brain Injury Association, Inc., (1995) p.74.

Wolcott, G., Lash, M., Pearson, S., Signs and Strategies for Educating Students with Brain Injuries: A Practical Guide for Teachers and Schools, HDI Publishers (1995)

Sohlberg, M., Todis., B., Glang, A., Lash, M., Brain Injury: Causes and Consequences for Students, Lash and Associates, (1999), pp. 11-12.

Brain Injury Source, Volume 3, issue 3, Summer 1999, pp. 10-45.

Guidelines Paper: Traumatic Brain Injuries, Special Education Services Unit, Colorado Department of Education, March 1991.

CLASSROOM OBSERVATION GUIDE

SENSORY/MOTOR

	Never	Sometimes	Often	Almost Always
Poor balance				
Uncoordinated				
Messy written work				
Stands to read/write				
Distracted when not working with materials directly in front of herself				
Sensitive to light				
Sensitive to sounds				
Easily confused				
Pulls on ears, rubs face/eyes, leans heavily on table, rocks back in chair				

COMMENTS:

Appendix- c

CLASSROOM OBSERVATION GUIDE

REDUCED MENTAL PROCESSING SPEED

	Never	Sometimes	Often	Almost Always
Fails to follow instructions				
Poor learning of new information				
Difficulty doing more than one thing at a time				
Poor task persistence				
Looks "blank"				
MPS index on WISC and WJR < 15th %				
Doe not get the gist of the situation				

COMMENTS:

Appendix- d

CLASSROOM OBSERVATION GUIDE

UNEVEN COGNITIVE ABILITIES

	Never	Sometimes	Often	Almost Always
Differences in performance across subjects				
Discrepancy between performance on tests/homework				
Inconsistent from day to day				
Performance not consistent with "global" IQ or achievement scores				
Wide scatter across sub-tests				
Teachers cannot agree on student's ability level				
Frustration				

COMMENTS:

Appendix- e

CLASSROOM OBSERVATION GUIDE

NEW LEARNING DIFFICULTIES

	Never	Sometimes	Often	Almost Always
Average standardized test scores but poor class work, test scores				
Poor incidental learning				
Work demonstrates rote mastery, but doesn't draw inferences or integrate information				
Skill is demonstrated immediately but not the next day				
New information is not applied				
Student seems to have trouble "remembering"				

COMMENTS:

Appendix- f

CLASSROOM OBSERVATION GUIDE

MEMORY

	Never	Sometimes	Often	Almost Always
Does not do as directed				
Tasks are done incorrectly or incompletely				
Does not know what homework was assigned				
Does not turn in homework				
Does not recall details of activities or events				
Recalls pre-injury or over-learned information but not new information				
Does not recall having eaten				
Wanders or loses way in school, home or community				
Requires multiple repetitions of instructions or information				

COMMENTS:

Appendix- g

CLASSROOM OBSERVATION GUIDE

ATTENTION/CONCENTRATION

	Never	Sometimes	Often	Almost Always
Does not follow instructions				
Talks out of turn				
Has trouble focusing on classroom discussion, lectures, or slide presentations				
Responses are off topic or unrelated to the situation				
Has difficulty staying in one place, sitting still				
Has difficulty with multi-step instructions				
Gives up on a task				
Has difficulty shifting between topics/tasks				

COMMENTS:

CLASSROOM OBSERVATION GUIDE

REASONING, PROBLEM-SOLVING & JUDGMENT

	Never	Sometimes	Often	Almost Always
Does not ask for help				
Argues with adults or peers				
Has difficulty drawing conclusions				
Makes unsafe choices with friends or activities				
Does not understand figures of speech, metaphors				
Behavior or language not suitable to the situation				
Reacts adversely to changes in routine or unexpected problems				

COMMENTS:

Appendix- i

CLASSROOM OBSERVATION GUIDE

POOR ORGANIZATIONAL SKILLS

	Never	Sometimes	Often	Almost Always
Difficulty with transitions				
Temper tantrum over changes in routine				
Behaves poorly during unstructured times				
Fails to hand in homework				
Poor performance on long-range projects				
Does not apply new knowledge				
Poor note-taking				

COMMENTS:

Appendix- j

CLASSROOM OBSERVATION GUIDE

EMOTIONAL/SOCIAL & BEHAVIORAL

	Never	Sometimes	Often	Almost Always
Immature				
Misbehaves				
Emotions are not proportional to situation				
Impulsively laughs, cries, or is angry				
Interrupts				
Easily agitated, upset, out of control				
Does not grasp concept of behavior norms				
Makes inappropriate social or sexual comments or actions				
Argues with others				
Says or does the first thing that comes to mind				
Does not pick up on cues				
Has unpleasant eating habits				
Avoids or refuses to participate in discussion or activity				
Withdraws from interactions				
Affect appears flat or passive				
Appears depressed				
Has few or no friends				
Repeatedly does or says one thing				

COMMENTS:

Appendix- k

CLASSROOM OBSERVATION GUIDE

FATIGUE

	Never	Sometimes	Often	Almost Always
Appears to be daydreaming				
Unusually slow doing tasks				
Reports having headache or vague pains				
Has poor memory				
Symptoms of fatigue (yawns, dozes, etc.)				
Symptoms of illness (pale, listless, etc.)				
Is disruptive, fidgets, or misbehaves				

COMMENTS:

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

[X] This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

[ ] This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").